Vol. XI, No. 4

April, 1935

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SOAP

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EXTERMINATING ● CLEANSERS ● SANITARY SUPPLIES

MOSKENE

IS AN EXAMPLE OF THE

SURVIVAL OF THE FINEST!

● Your choice of artificial musks is limited. Most newcomers in this line are mere flashes in the pan. Not so MOSKENE. MOSKENE has found a permanent place on nearly every soap manufacturer's list of necessities. It has survived. It is one of the finest. It has a powerful odor and a special note all of its own.

MOSKENE is a pure definite chemical body, never made before. It is more pleasant in odor and less affected by light than Musk Ambrette. Its odor approaches the much admired note of the Ambrette seed.

MOSKENE offers you many new and interesting possibilities. It is steadily increasing in popularity. Write to us. We will gladly send you a sample.

GIVAUDAN
DELAWANNA INC.
80 Fifth Avenue, New York, N. Y.
BRANCHES: Philadelphia, Los Angeles, Atlanta, Cincinnati, Detroit, Dallas, Baltimore, New Orleans, Chicago, San Francisco, Montreal, Havana.

IF THE *Paleohippus Diplodocus* EVER CAME BACK . . .

There'd be a FALCON INSECTICIDE ★ ready to lay him low

TWENTY YEARS of study have taught Falcon experts that all bugs are not alike. Each has different habits and instincts. And each requires a different insecticide. That is why Eagle does not offer a fly spray to kill roaches or a roach powder for moths.

When your customers buy Falcon Insecticides, they are assured of the highest uniform killing power per dollar. For Falcon Insecticides are loaded with concentrated insect death.

Active ingredients are carefully selected and compounded under the most vigilant laboratory control. But what is more important, a sample from each batch of insecticide is tested for percentage of kill—against live bugs—in accordance with the Peet-Grady method. While 65 per cent "dead" is sufficient to pass this test, every Falcon Insecticide shows from 85 to 90 per cent "dead."

Remember, there is a Falcon Insecticide for each type of insect. So be prepared for the warm days ahead and order a supply of Falcon Insecticides—now. They'll guarantee you many repeat orders and a definite sales increase.

★

FALCON PERFUMED FLY SPRAY

FALCON FLY SPRAY

FALCON BED-BUG KILLER

FALCON MOTH KILLER

FALCON MILL INSECTICIDE

FALCON ROACH POWDER

EAGLE SOAP CORPORATION

HUNTINGTON INDIANA

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for the
LEADERS

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- Sassafras Scrub Soap
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- Jelly Soaps

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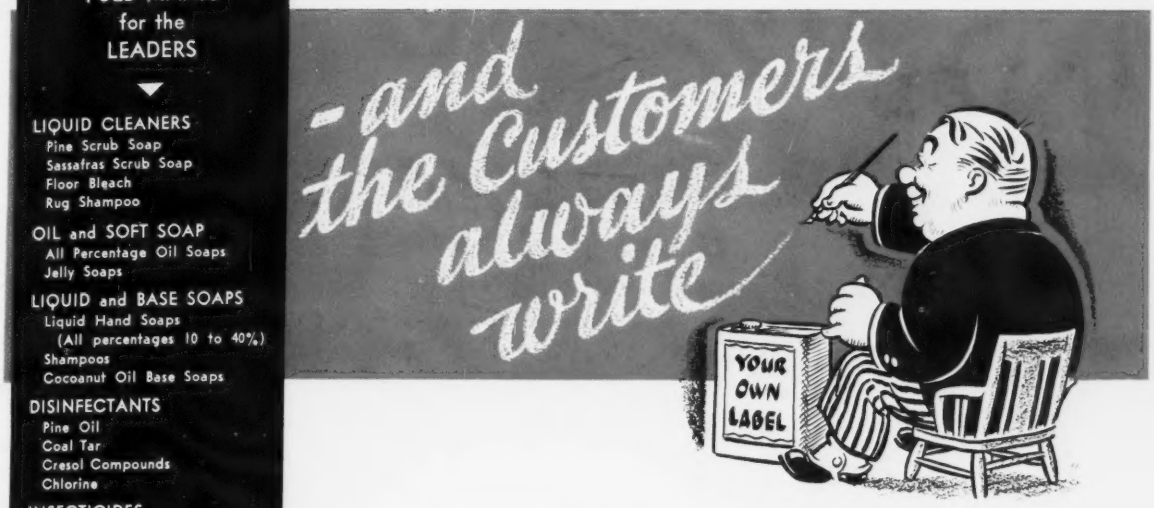


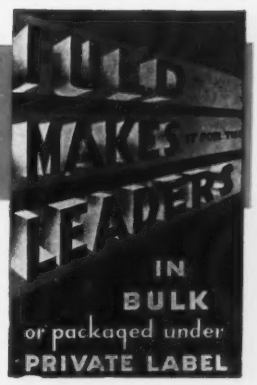
Why is it that 98 out of every 100 customers always write that they like Fuld Products and Fuld Private Label Service? Our catalog explains it in hundreds of ways. Our complete line of Sanitary Products under your own name gives you the range to meet today's competition.

Its guaranteed Kill-Strength is equivalent to one pound high test pyrethrum flowers per gallon.

Perfumed or Odorless

FULD

FULD BROS. INC.
2310 FREDERICK AVE.
BALTIMORE, MD.



THE cleaning and polishing of woodwork, floors and furniture is an activity that goes on in every home and it calls for floor oils, liquid waxes, furniture polish and cleaners. Such household supplies are best packaged in attractive glass containers under attractive, convenient Anchor Amerseal Caps. It's hard to beat that combination for creating a sales-appealing and satisfaction-giving package. First sales come easier, repeat sales come surer. For the very good reason that the Anchor Amerseal Cap gives a completely tight, leak-proof seal as well as unparallelled convenience. May we prove these two statements to your satisfaction by sending you complete information?

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LONG ISLAND CITY, N. Y. TORONTO, CAN.

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★ SEALING EQUIPMENT
★ RESEARCH ★ PACKAGE DESIGN
5 STAR SERVICE

Anchor Amerseals

SOAP

Reg. U. S. Patent Office

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April, 1935

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SANITARY Products Section, which is included as a department of every issue of SOAP, begin on page 71. Production Section begins on page 59.

NRA CODE GRAPHIC ARTS INDUSTRY 1934

Published monthly on the 15th by

MAC NAIR-DORLAND COMPANY, INC.

254 WEST 31st STREET NEW YORK, N. Y.

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NIAGARA CAUSTIC POTASH

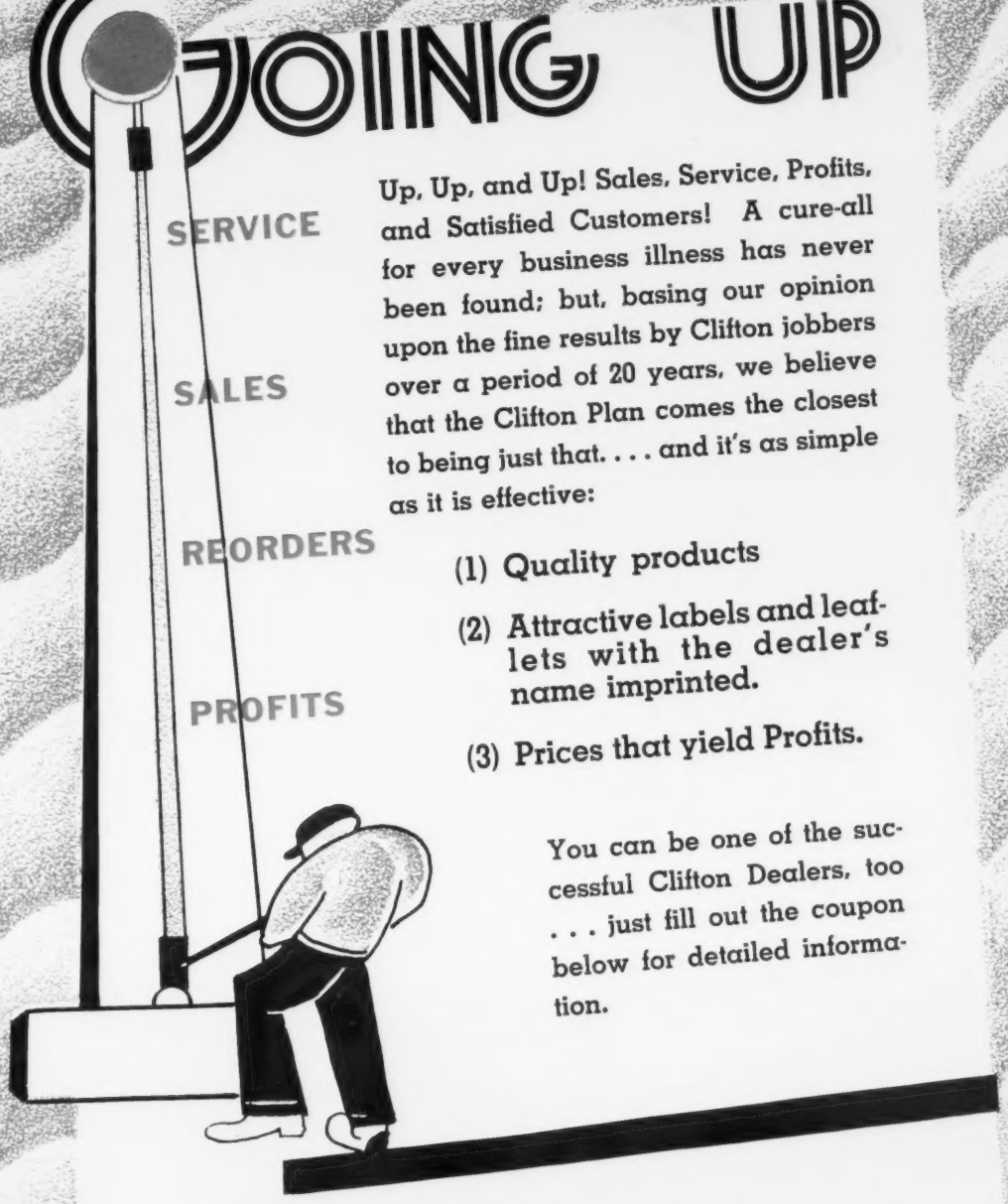
has never lost its head start!

Niagara Alkali was the first to produce Caustic Potash in this country. More than 30 years spent in manufacturing and handling this important product have given us a head start in experience . . . and we make the most of it. Improvements have been made steadily, and today — as always — Niagara Caustic Potash is the recognized standard of quality . . . unsurpassed either here or abroad. When you need Caustic Potash remember that . . . and put your trust in a pioneer product — a tried and tested veteran . . . still the standard by which quality is measured!

NIAGARA ALKALI COMPANY
9 East 41st Street, New York, N. Y.

Associated with Electro Bleaching Gas Company, Pioneer Manufacturer of Liquid Chlorine

GOING UP



Up, Up, and Up! Sales, Service, Profits, and Satisfied Customers! A cure-all for every business illness has never been found; but, basing our opinion upon the fine results by Clifton jobbers over a period of 20 years, we believe that the Clifton Plan comes the closest to being just that. . . . and it's as simple as it is effective:

(1) Quality products

(2) Attractive labels and leaflets with the dealer's name imprinted.

(3) Prices that yield Profits.

You can be one of the successful Clifton Dealers, too . . . just fill out the coupon below for detailed information.

CLIFTON CHEMICAL CO.

246 FRONT ST
NEW YORK

TEAR OFF HERE ----------

CLIFTON CHEMICAL CO., INC. 246 Front Street, New York City.

It's worth a try. . . . The items checked would probably help increase our sales. Please quote:

- ☐ Semi-Castile Liquid Soap
- ☐ Foamwel Liquid Soap
- ☐ Liquid Soap Base
- ☐ Liquid Soap Dispensers
- ☐ Cresolene Disinfectant
- ☐ Bar Oil
- ☐ Pine Scrub
- ☐ Deodorizing Cakes
- ☐ Deodorizing Blocks
- ☐ Deodorizing Sprinklets
- ☐ Oil Soaps
- ☐ Metal Polish
- ☐ Spot Remover
- ☐ Mopping Varnish
- ☐ Rubless Wax
- ☐ Furniture Cream
- ☐ Insect Killer
- ☐ Coal Tar Disinfectant
- ☐ Pine Disinfectant
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- ☐ Shampoo Liquid and Base

(NAME) .....

(ADDRESS) .....

. . In addition to Soap . .
this illustrates some of the many other products that are wrapped by our machines.
We have served the leading package goods manufacturers ever since machine wrapping was first introduced. The broad experience thus acquired has given us a fund of knowledge covering both the mechanical and merchandising angles of packaging.
In planning for package improvements or in seeking new economies, we invite you to avail yourself of our assistance and suggestions. Write for information, or consult our nearest office.
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Over 200 Million Packages per day are wrapped on our Machines

'EVER THINK OF THE SPAN FROM THE "COAL OIL" **CAN...**

TO THE **PACKAGE** OF TODAY?

PRODUCTS ● staplest of the staple! **SPECIALTIES** • new as the morning • all speak out from snappy closures in every corner of the store • dressed up for SALES!

NEW BRAND NAMES • and old ones too! • wedge in both to keynote and revive trade demand.

SEE what the deft art of **PACKAGING** has done! Note the skillful appeal to eye and purse that springs from smart design and color touch!

● PLAIN CANS are still our stock in trade, but we range far afield in display values that express supremacy in SALES creation!

YOU can use this TALENT!

METAL PACKAGE CORPORATION

ESTABLISHED 1909

110 E. 42ND ST., NEW YORK CITY

• One of America's Largest Canmakers •

SALES OFFICES AND PLANTS • NEW YORK CITY • BALTIMORE • BROOKLYN • CHICAGO • BOSTON

THE FISCHER CAN COMPANY DIVISION • HAMILTON • OHIO

Makers of
Cleaning Compounds

more and more appreciate that
the addition of

NEWPORT PINE OIL

stimulates the effectiveness of their products. The stubborn greasy and waxy elements are loosened and better emulsified.

GENERAL NAVAL STORES COMPANY, INC.

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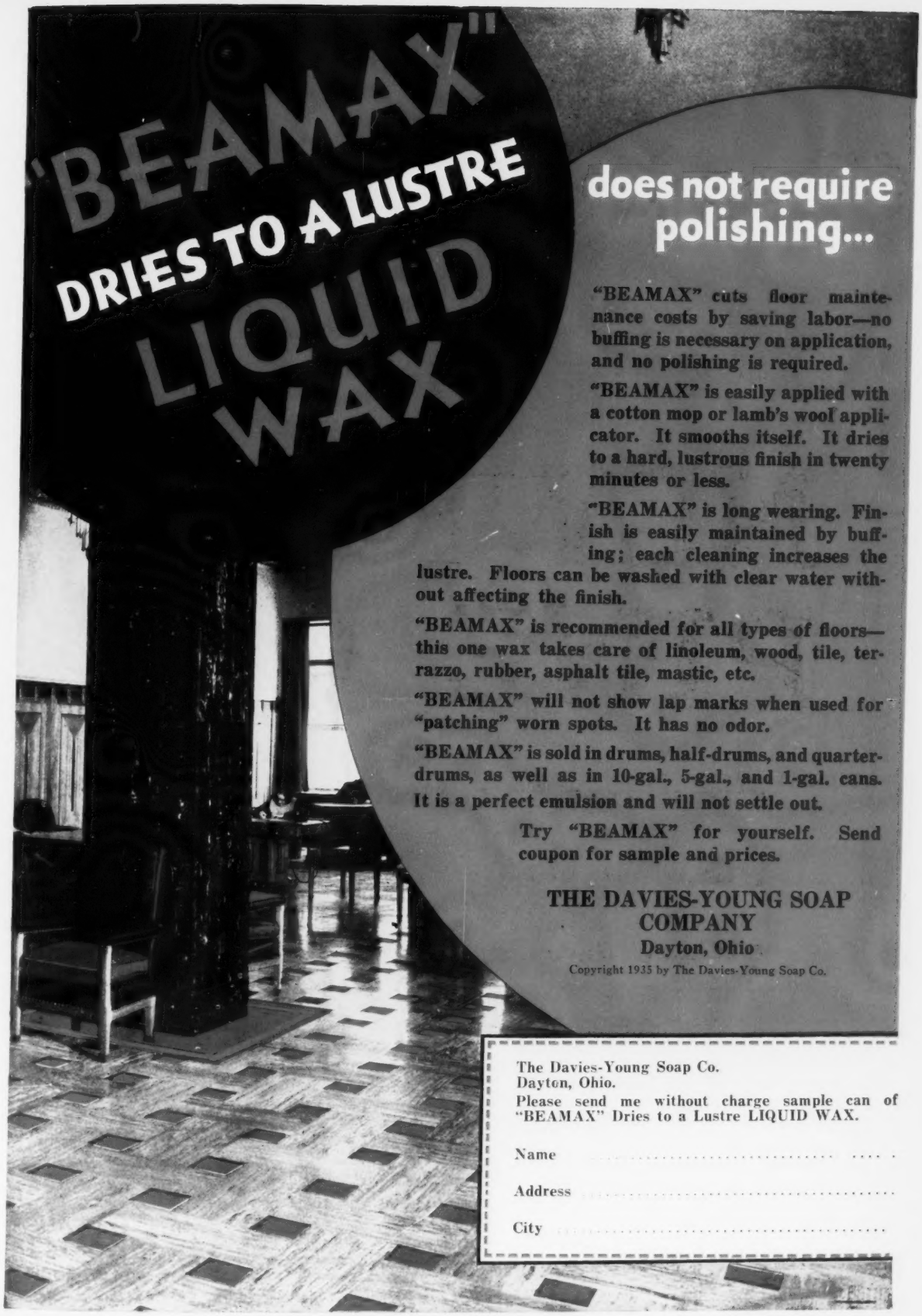

does not require polishing...

"BEAMAX" cuts floor maintenance costs by saving labor—no buffing is necessary on application, and no polishing is required.

"BEAMAX" is easily applied with a cotton mop or lamb's wool applicator. It smooths itself. It dries to a hard, lustrous finish in twenty minutes or less.

"BEAMAX" is long wearing. Finish is easily maintained by buffing; each cleaning increases the lustre. Floors can be washed with clear water without affecting the finish.

"BEAMAX" is recommended for all types of floors—this one wax takes care of linoleum, wood, tile, terrazzo, rubber, asphalt tile, mastic, etc.

"BEAMAX" will not show lap marks when used for "patching" worn spots. It has no odor.

"BEAMAX" is sold in drums, half-drums, and quarter-drums, as well as in 10-gal., 5-gal., and 1-gal. cans. It is a perfect emulsion and will not settle out.

Try "BEAMAX" for yourself. Send coupon for sample and prices.

THE DAVIES-YOUNG SOAP COMPANY
Dayton, Ohio

Copyright 1935 by The Davies-Young Soap Co.

The Davies-Young Soap Co.
Dayton, Ohio.
Please send me without charge sample can of "BEAMAX" Dries to a Lustre LIQUID WAX.

Name .....

Address .....

City .....

"I WOULDN'T SAY 'YES', BUT I COULDN'T SAY 'NO'"

CYMANOL may be just what you are looking for. It has a pleasant, pungent, woodsy odor. Maybe you could use it for masking unpleasant odors in some of your products.

POSSIBLY you would like to increase the detergent properties of soaps or develop new detergents with Cymanol sulphonates. Or use it for emulsions in floor waxes.

MAYBE CYMANOL mixed with organic solvents would make just the solvent you need for use with waxes or resins. Maybe you need CYMANOL as a splitting agent for fats and greases, or as a penetrant for textiles.

MAYBE you could use CYMANOL as an extender for essential oils. Maybe you need it as a base for a low-cost perfume.

THE only way you can say "Yes" is after you have given CYMANOL a trial.

ASK for a generous sample, give it a test and find out how low the cost is compared with some other less effective material. Send us the coupon below.

●

Coupon

Certainly I will give Cymanol a trial. Send me a ..... oz. free sample.

Name .....

Company .....

Address .....

from SOAP, Apr. 1935.

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230 Park Avenue . . . . New York City

SOAP MAKERS

will find JAVANELLA to be the ideal perfume for laundry soap, completely eliminating the odor of fatty substances, and imparting to the soap an appealingly, fresh, clean and lasting scent. JAVANELLA is also ideal for use in soap powders and scouring powder.

JAVANELLA is ALKALI-PROOF

and always costs less than Citronella

● THE PRICE OF JAVANELLA IS NOT SUBJECT TO MARKET FLUCTUATIONS

FELTON CHEMICAL COMPANY, Inc.

Executive Offices and Factory:

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Manufacturers of AROMATIC CHEMICALS, NATURAL ISOLATES, PERFUME OILS, ARTIFICIAL FLOWER AND FLAVOR OILS

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"Yes

Ma'am...

it kills everything that crawls, flies and swims!"

Who's to blame? *How* does it happen that dealers frequently make exaggerated claims for an insecticide? That consumers somehow get the impression that a single insecticide will answer every need?

No matter whose fault it is, the fact remains that misinformation and false claims are damaging, not only to the individual products bought and sold that way, but to the industry as a whole.

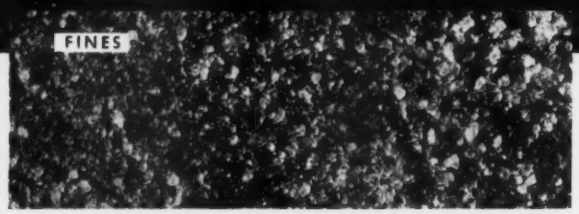
We agree with the far-sighted manufacturers who feel that the industry's biggest job is one of education—education of both dealer and consumer. The dealer must learn to answer the consumer's individual problem with the right type of insecticide. The consumer must learn not only to buy the right insecticide for his purpose, he must understand how to use it.

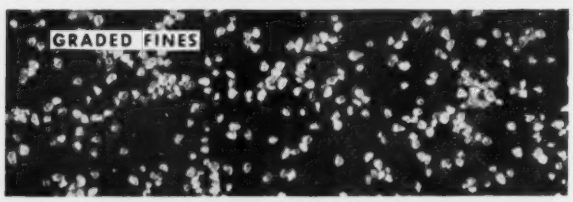
AMERICAN CAN COMPANY

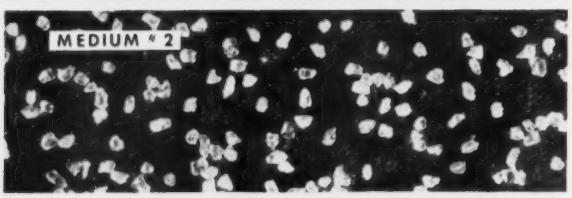
230 Park Avenue, New York

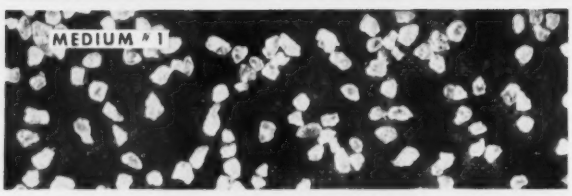
PARADOW

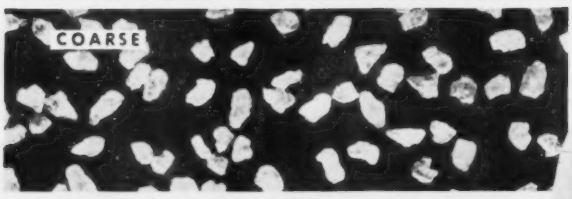
PURE PARADICHLORBENZENE

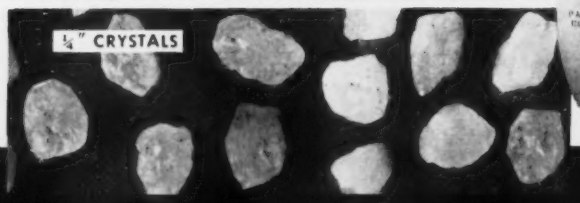












SIX sizes of pure, snow-white crystals, all uniform in size, will make it possible for you to select the size and form of Paradichlorbenzene that fits your requirement. Each form of crystal is designed to meet specific trade needs, whether it is to be processed or repackaged in its original form and sold as a moth killer, a deodorant, or for other purposes. All sizes possess marked free-flowing properties.

We can also supply any special size crystals in addition to the six standard sizes illustrated.

We invite your inquiry. Let us quote on your requirements of Paradow, Pure Paradichlorbenzene of highest grade.

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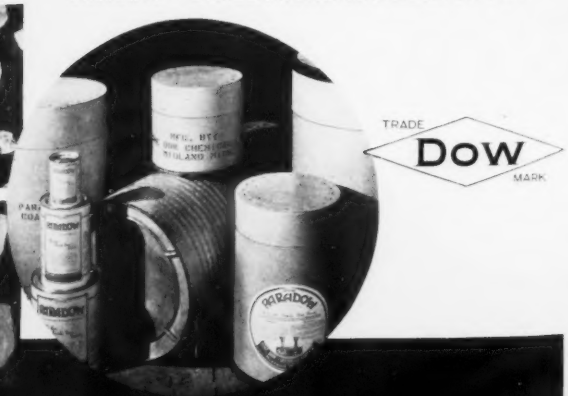

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

Branch Sales Offices: 30 Rockefeller Plaza, New York City • Second and Madison Streets, Saint Louis

Free Flowing

Grasselli Tri-Sodium Phosphate

● For any commercial use, you will find in our T. S. P. the high quality and unvarying uniformity you require.

As our process permits GRASSELLI Tri-Sodium Phosphate to cure, it is also FREE FLOWING.

Non-Sifting Packages. Shipped to you in barrels with paper liner—no loss either in transit or storage. Also comes in kegs and bags. Grades—fines, globular, medium, coarse and flake.

Let us figure on your T. S. P. requirements. If you are in a hurry, call up our nearest branch.

THE GRASSELLI CHEMICAL COMPANY, INC.

Founded 1839 *Subsidiary of E. I. DuPont de Nemours & Co., Inc.* **Cleveland, Ohio**

New York and Export Office: 350 Fifth Avenue

BRANCHES AND WAREHOUSES:

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Represented in Canada by CANADIAN INDUSTRIES, LTD.
Acids and General Chemicals Division—Montreal and Toronto

GRASSELLI GRADE

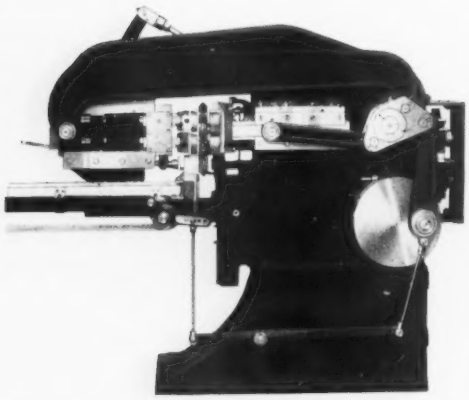
A Standard Held High for 96 Years

JONES
TOGGLE OPERATED
PRESSES

SAVE HUNDREDS OF DOLLARS MORE PER YEAR THAN EARLIER MODELS.

Their long toggle pressure makes the soap cohere so that particles do not stick to the dies and make it possible to run them for hours without stops for cleaning. Such stops on other presses put the whole line out of production for more minutes per day than you will realize without adding them up. Again, dies which accumulate scrap press only a few cakes before they begin to lose their finish and clean impression. If run too long before cleaning, many cakes will have to be remilled and pressed again. To do this costs money, but it costs more in loss of sales to neglect it.

Toggle Operated Presses obviate such losses, to say nothing of their higher production, freedom from early depreciation, multiplying by three the life of dies and conserving the nerves of your employees by their noiseless, efficient operation.



Type K Toggle Operated Toilet Soap Press

Many successful soap makers are replacing other models with

JONES TOGGLE PRESSES

R. A. JONES & COMPANY, INC.

P. O. BOX 485 • CINCINNATI, OHIO

SOAP

Volume Eleven **Number Four**

As the Editor Sees It . . . .

WITH a further postponement of the effective date of the NRA order returning toilet soaps to the jurisdiction of the retail drug code to June eleventh, it seems that the possibility of this shift away from the retail grocery code becomes more remote. The chances are now that toilet soaps will remain under the grocery code where they belong as dictated by the bulk of sales.

—— • ——

OUT of four billion pounds of oils, fats and greases consumed in the United States last year, the soap industry used something over a billion and a half pounds or forty-one per cent of the total. The consumption of fats by soap makers in 1934 showed an increase of twelve per cent over 1933. Of this larger tonnage, the greatest gain was made in the consumption of tallow which rose more than thirty per cent over figures for 1933. In view of the excise tax on coconut, palm, palm kernel, and other imported oils, which became effective last May, this increase in the use of tallow at the soap kettle was not unexpected. In fact the heavy imports of tallow during the last half of 1934 to augment a subnormal domestic production presaged a sharp rise in the tallow figure.

Of the vegetable oils, palm oil was outstanding in showing a decline of consumption for soap manufacture of over twenty per cent in 1934. But in spite of the excise tax, more coconut oil was used by soapers than in 1933, while palm kernel oil jumped to almost three times the figures of the previous year.

The consumption figures for fats and oils should be a fairly accurate index of the production of soap. Allowing for various factors which might influence actual output, an estimate based on these figures would place soap production for 1934 roughly at ten per cent above that for 1933. In view of the fact that soap production never did drop off in anything like the proportion of output in numerous other industries, the marked increase in 1934 is noteworthy.

—— • ——

DURING 1934 while the soap industry was doing some ten per cent or so more business than in the previous year, raw material markets were on the rise. But taking the year as a whole, the ratio of raw material replacement costs to selling prices for finished soap products was generally satisfactory. Low material prices compensated for many of the low soap prices which were in effect. Today, however, things have changed considerably. Raw materials, chiefly fats and oils, have advanced to levels which make the soap price situation in some instances positively critical. Quite true, there have been advances in soaps, but they have not brought soap prices anywhere near into line with new costs. Of what use are price advances of twenty per cent if material costs are up over a hundred per cent? The old cry that competition will not permit of further price advances is a weak excuse which will make a very poor explanation of the absence of a decent profit statement at the end of the year.

In our opinion, soapers who are coasting along because they happen to have some lower cost raw materials on hand, are riding for a fall. We know that it is a tremendous satisfaction to be able to increase one's tonnage at the expense of competitors, but too often it is

not profitable. And like any other business, soap factories are supposed to be run for profit and not for the satisfaction of an ego. From top to bottom, soap prices are too low. But bemoaning the fact will not do any good, as moans do not show up in the profit column.

WITH an amendment to the Copeland Bill, accepted by Senator Copeland, which specifically excepts "soaps and household cleansers for which no medicinal or curative qualities are claimed by the manufacturers or retailers in labels or advertising," the question of including ordinary toilet soaps in the definition of cosmetics in the bill, seems to be definitely settled to the satisfaction of the soap industry. Senator Copeland stated in discussing the fears of soap makers that toilet soaps would be included: "In order that there might not be such an absurd interpretation of the law by any 'bureaucrat' or other person, we inserted this very language providing that the term 'cosmetic' does not apply to ordinary household soap."

ALTHOUGH run of the mine toilet soaps will not be classed as cosmetics under the Copeland Food and Drug Bill, soaps which claim definite medicinal and cosmetic virtues, however, probably will come under the scope of the law. Nevertheless, credit for this prompt and effective action in excepting ordinary toilet soaps must be given to the Association of American Soap & Glycerine Producers.

And in connection with the Copeland Bill in Washington and a host of state bills directly affecting the soap industry, we wonder if the rank and file of the industry realize what the Association is doing for them at no cost except their nominal ten dollars per year dues. This legislative work is extremely expensive, and its cost is being borne by those soapers who pay association dues in the higher brackets. In no other industry of which we know, is there an effective trade association operated for the benefit of the industry at large at practically no cost to a majority of firms in the industry.

THE Bland Bill which proposes an excise tax of three cents per pound on imported tallow, olive oil foots, rapeseed oil, and others, is an additional federal legislative proposal to worry purchasing agents in the soap industry. A sharp increase in tallow imports during the past six or eight months is one of the motivating forces behind the bill. As yet this bill has not reached an advanced stage in Congress, but it may within the next month. The time to protest against it is now and again later if necessary. A letter to your congressman now will help in building up the opposition. Heaven knows that the soap industry is surrounded and hampered enough already by taxes and legislative restrictions. This bill is just one more thing to add to an already well scrambled raw material situation which is calculated to drive purchasing agents crazy.

IN spite of the rigid discipline of the Soviet, the women of Russia have lost none of their basic feminine vanity if the demand for perfumed soaps, cosmetics, toilet waters, and the like is a criterion. Protests a year or so ago by workers to the Soviet officials did much to speed up improvement in the quality of toilet soaps. The demand for toilet articles brought about a remarkable increase in output, we are told. But from Paris, we hear that counterfeits of famous French brands of toilet goods are on sale in many parts of Russia. Well, in this respect, Russia does not differ a great deal from other countries of the globe, including the U. S. A.—as half of the barber shops in this country bear witness.

AN increase in the number of complaints of rancidity in soap has been indicated of late. Quite probably this has a direct connection with the higher prices for fats and oils. In a market like that of today, compared with what we had a year ago, the tendency to work in lower grade oils and fats is only natural. A year ago, a fancy edible tallow or coconut oil cost considerably less than a low grade grease or oil costs today. Because of the low prices and ample supplies, soapers used the higher quality materials freely. Today, the sharply higher cost of all fatty raw materials without anything like corresponding advances in soap prices has forced many soap makers to turn further down the quality scale for their oils and fats. With off-grade fats in the kettle, there is always a predisposition to rancidity in the finished soap. In the past when soapers have been caught between rising fat costs and inadequate advances in soap prices, quality has suffered. It may suffer again for the same reason.

Trouble at the Soap Kettle and in the Textile Industry is laid to present unreliable methods for the evaluation of

OLIVE OIL FOOTS

By MARGARET J. HAUSMAN

SULFUR olive oil, known in this country as olive oil foots, is the oil extracted with carbon bisulfide from the olive pulp after edible and commercial oils have been pressed out. In contrast to the usual familiar color of olive oil, that of the pulp oil is dark green due to chlorophyll dissolved out of the olives. This pulp oil contains, in addition, an appreciable amount of extractive material not present in expressed oil, sulfur compounds formed by the action of the solvent, and substances which develop on standing due to aging, oxidation, and fermentation.

The term "foots" has often been labeled a misnomer[1]: that this product is true olive oil. Generally speaking, it is olive oil with about the same physical and chemical constants as edible olive oil. However, it is more accurate to state that it is a residual oil, for it does differ distinctly from olive oil, in respects other than its color. Namely, it has a heavier body, higher content of "stearine", lower iodine values, higher titer, and greater unsaponifiable matter, to say nothing of the compounds previously mentioned that are formed through chemical changes. If we regard the term "foots" as applied to settlings of sludge-like character appearing in crude oils after they have stood for some time, it is but a step removed from that idea to consider that such a separation may be accomplished in another way. This might be by leaving the "foots" or sediment in the olive oil cake by a rather moderate expression such as that actually employed in the manufacture of the yellow olive oils, then removing the residual oil containing such foots (which would have been settlings in a crude oil had stronger expression been used) by the use of some solvent of great extractive power like carbon bisulfide. Even freshly extracted pulp oil differs from true olive oil obtained by pressure. It contains extractive matter similar in nature to the sediment of crude oils of other kinds, as well as matter peculiar to the olive.

At the beginning of the season, the foots run very good in quality, but as the season advances, the manufacturers occupied in the expression of the primary grades of olive oil permit the pulp to accumulate, with consequent deterioration in quality. The fermentation and decay which occur hydrolyze the glycerides of the oil in this pulp into fatty acids, oxidizing and hydrating the unsaturated acids, producing oxidized and hydroxy-acids. Metallic soaps also may form by reaction of fatty acids with any metal such as iron or calcium that they may be in contact with, for storage tanks may be of iron or cement. The chlorophyll passes into the brown phase. It is no wonder, then, that at the end of the season, the extracted oil is excessively high in the end products of oxidation and hydrolysis.

Foots may be extracted by solvents other than carbon bisulfide, although according to the New York Produce Exchange definition of olive oil foots[2], bisulfide-extracted oil is apparently the only type recognized. Apparently other types are tacitly ignored. The rule is certainly obsolete, for products extracted with naphtha and halogenated solvents like the chloroethylenes and carbon tetrachloride have been freely sold on the market for years as olive oil foots. The differences among foots due to the use of different solvents are slight. The unsaponifiable matter is greater in the naphtha-extracted product, and in the others, there are traces of chlorine compounds. Obviously, sulfur compounds are missing in both cases. It would appear that one may well risk rejection of his oil on such a narrow definition as this rule expresses literally, whereas in substance the oils are almost identical, presenting no differences as regards the uses for which they are intended.

Since the primary purpose of the olive oil industry is to make the yellow or expressed olive oils, both edible and commercial grades, sulfur oil is really a by-product, but, like so many other by-products, it is a very useful and profitable one. The importer sells the foots as such, a by-product, affected by conditions of seasonal variations in quality beyond his control. He feels that it is absurd to devise specifications for a refuse or residual oil as rigid as those for edible or commercial grades of olive oil.

For years sulfur oil has been sold under no restrictions as to quality other than 3% moisture, carbon bisulfide insoluble impurities, and soap color[2], yet almost anything may be expected to be present. Water merely determines by difference the amount of oil involved in a given transaction. The impurities represent substances

like dirt, fiber and sand, insoluble in ether and carbon bisulfide, but such impurities as metallic soaps, resins, and hydrocarbons will pass the solubility test undetected. Almost any shade of green answers the soap color requirement. For many years it was found profitable to add dye or chlorophyll to foots to give them a good green color, so that practically all now pass the color test.

That these few tests as a measure of control over the quality of foots are decidedly unsatisfactory has been apparent to the trade for years. Nothing seems to have been done officially about it, although numerous instances have occurred in soap plants that warrant the establishment of more rigid specifications in order to avoid such costly failures of quality. Interest has been focussed of late on the amount and nature of oxidized acids present in foots as a more accurate measure of quality. This has arisen in two ways:—in the making of soap and in its application.

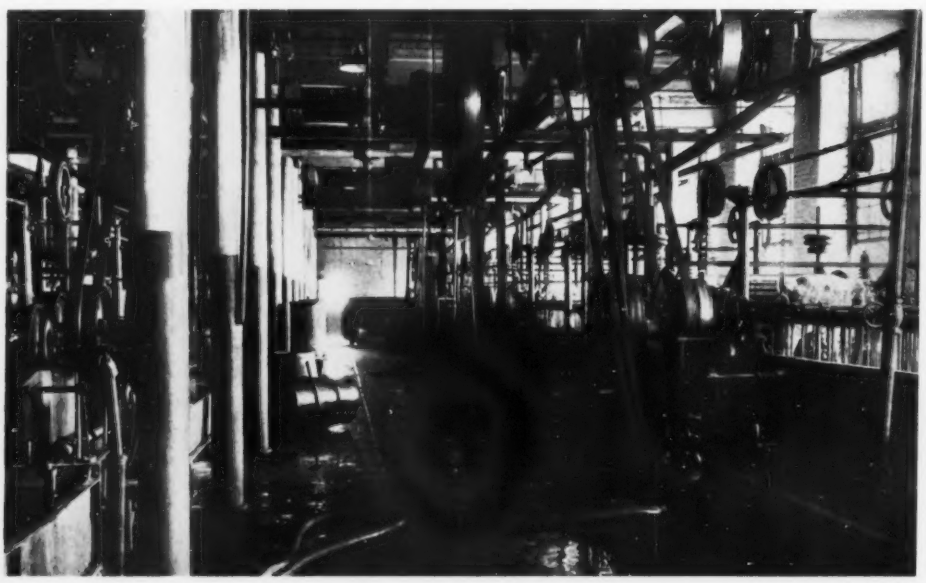
Trouble In The Soap Kettle

GENERALLY speaking, the better soap-making establishments can, of course, take almost any kind and quality of fatty matter and make good soap. Many of the firms engaged in the making of textile soaps are, however, not so well equipped technically. Their procedure is quite elementary. Hence the presence of lime or iron soaps in foots, or of any great amount of oxidized acids, unrevealed by the usual chemical analysis governing the sale of foots, causes considerable trouble in saponification, either through failure to saponify properly or by causing so bad an emulsion that the soap fails to separate properly. The normal period of purification is unnecessarily prolonged. There is an appreciable loss in the yield of finished soap. This is where the soap-maker complains.

A high content of oxidized fatty acids still remaining in the finished soap even after thorough purification causes a precipitation of the less soluble esters when the soap is used for textile washing. Objectionable scum forms in washing the skeins or fabrics, adhering to them as they are drawn out of the bath, thus making it necessary to add more than the usual amount of soap for satisfactory washing and rinsing. This is where the textile house finds fault with the finished soap and passes the buck to the soap supplier.

Innumerable complaints have brought out, therefore, hitherto unconsidered factors in the quality of foots. The soluble rather than insoluble impurities are being looked into. Many of the textile soap makers desire a closer check on quality than is given by the customary "M., I., and Soap Color." Some demand a minimum content of oxidized acids and of unoxidized acids, so as to determine not only the amount of undesirable matter but the total amount of true fatty matter available for saponification. Both can be determined chemically on the one sample, the naphtha-soluble filtrate containing the unaffected oil, with the normal constants of olive oil, and the insoluble residue containing the oxidized acids. The latter are further purified by solution in alcohol and warm ether, and filtration from impurities. What the normal amounts of oxidized acids appearing in foots are, is a question to be debated and constitutes one of the reasons for the work undertaken in this article.

Other specifications that have been sought from time to time to measure the quality of foots have been based on the unsaponifiable matter, on ash content, on kerosene insolubles, and, lastly, on naphtha-insoluble impurities. There is a decided difference between the last two, as will be shown later. Since oxidized acids and resins are saponifiable, it is evident that the unsaponifiable matter will not include them and may, in fact, show up normal for foots, while the foots may be decidedly off in quality. Ash content should disclose metallic soaps otherwise un-



Although olive foots finds a considerable use in toilet soaps, much green olive foots soap goes to the wash vats of the textile industry where deviations in quality may cause no end of trouble.

Olive orchards last down through the centuries. This grove of olive trees on the Island of Majorca off the coast of Spain is said to be over 2,000 years old. This stump has grown many trees.

detected by the customary ethyl-ether solubility test, as any undue proportion of iron or lime soaps will increase the normal ash content.

We often find samples that show little or no ethyl-ether impurities yet may contain an enormous amount of soluble impurities affecting the making of soap. Iron in the form of fine rust or particles of scale, being insoluble, can be settled out and presents no problem to speak of to the soap-maker. When this iron occurs in the form of soap soluble in oil, however, the soap-maker has a problem not so easy to dispose of. The foots are harder to saponify, clotting and emulsification occur, the soap fails to catch and close in, or separate properly, extra lye and salt are needed, longer boiling is required, and so forth. The soap-maker finds his ingenuity taxed to the utmost, and when he has finally succeeded in making his soap, he finds that he has lost a great deal in the "nigre" and that the finished soap is poor in color and appearance, and that it still has a high content of oxidized acids, for when iron soaps are present the fatty acids are sure to be oxidized. He is certain to get complaints later from his customers about the soap's behavior in washing. No matter, then, how carefully the soap is purified, it may still hold an amount of metallic soap, sufficient to adhere to the goods in washing and later to cause spotting or uneven dyeing.

It is apparent from the foregoing that sulfur oil is not the simple thing it appears to be, that the term "foots" is not a misnomer, that it is not just olive oil, but oil containing a heterogeneous mixture of compounds, some known and others unclassified. These substances pass through with the oil from the marc on extraction with carbon bisulfide, but can be precipitated out and separated from the true oil with cold petrolic ether. Though a large proportion of them are soluble in caustic soda, and accordingly included in the saponifiable matter, they represent to the soap-maker just so much unusual and objectionable material.

New Methods of Evaluating Quality

FROM the analytical standpoint, there are, first, insolubles in cold petrolic spirits, tested for on the foots as received, which gives an idea of the amount of non-oil constituents or the so-called "mucilage". These insolubles include dirt and accidental impurities, resins, carbohydrates, albuminous material, phosphates or lipoids originating in the olive pomace, metallic soaps from the interaction of fatty acids and the metal of containers, and other undefined substances of little or no use for soap but gravely objectionable to the soap-maker. Taking this group together with the moisture and volatile matter (traces of solvent) and subtracting the total amount from 100, we get the percentage of the desirable oil available for saponification.

Secondly, we have another group of substances which are usually greater in amount for normal foots than the preceding,—the so-called "oxidized acids", some of which undoubtedly come down in the first group. These must be determined by a different procedure, namely, by first saponifying the foots sample, acidulating to obtain the total fatty acids, and then removing the oxidized and hydroxy-acids with the same kind of petrolic ether as that used in the first method. These acids are a measure of the age, and, hence, of the quality of the foots. The older the foots, the greater their amount.

Table I. shows the utter worthlessness of the ethyl

ether insolubles test as against that employing cold petrolic ether. For comparison is included also the hot kerosene, — "FAC" method,—customarily employed in determining impurities in fats other than sulfur oil. The advocation of this latter method for foots has been agitated for years by the larger soap companies. But here, again, warm kerosene dissolves lime and iron soap, —so that any gross addition of these soaps passes undiscovered. The results by this method are not much different from those by the ethyl-ether method. The use of cold kerosene is impractical as this solvent is not mobile enough and tends to plug the filter used.

TABLE I. Percentage of Insolubles of Olive Oil Foots

Sample No.	*Quality*	*Ethyl Ether* %	*Hot Kerosene* %	*Cold Petrolic Ether* %
1	Fair Average Quality	0.06	0.17	4.56
2	F. A. Q.	0.08	0.23	5.12
3	Choice	0.02	0.09	2.80
4	Old (Containing 2% Iron Soaps)	0.15	0.32	8.20
5	Very Old (5% Iron Soaps)	0.25	0.56	12.08
6	Old (20% Lime Soaps)	0.09	0.30	28.11

Time and temperature are obvious factors ever-present in the solubility of any substance and are especially important in the case of sulfur oil in petrolic ether. Neither this solvent nor kerosene would show any great difference in the amount of insolubles on normal foots from ethyl ether, when either is used hot. However, the cold petrolic ether will not only throw down oxidized and hydroxy-acids, but will throw down metallic soaps as well. The longer the solution stands, the more complete the deposition. A complete precipitation can be accomplished in a shorter time by increasing the amount of solvent. Experiments were carried out to determine a more desirable procedure than the method in present use of dissolving the sample in an indefinite amount of gasoline and allowing it to stand for from twelve to twenty-four hours. In Table II. we have results of tests made on several samples with different quantities of solvent and varying periods of time. The gasoline used is the fraction distilled off from the steam bath, having a boiling point below 75° C. Under the old method, unless the solubility test was conducted in a stoppered flask or container, sufficient evaporation took place during the twelve to twenty-four hour period to affect results, whereas under the much shorter method finally devised, there is little or no evaporation and the test may be performed in beakers covered with watch-glasses.

TABLE II. Tests to Determine the Method for Petrolic Ether Insolubles

Sample No.	*Time: Hours*	*Volume of Solvent Used* 100 cc. %	150 cc. %	200 cc. %	250 cc. %	300 cc. %
7	1	4.09	4.85	4.96	5.40	5.30
7	3	4.18	4.99	5.40	5.42	...
8	1	...	5.90	6.05	...	...
8	2	...	6.22	6.20	6.21	6.00
8	3	...	6.11	6.22	...	...
9	1	4.60	4.65	4.85	5.16	4.89
9	2	4.72	4.89	4.95	5.20	5.08
9	3	...	...	4.93	...	...
9	24 (keeping constant volume)	...	...	5.20	...	...

Five grams of sample are dissolved in cold gasoline solvent, stirred for one-half hour at intervals, then allowed to stand. A fine whitish substance is thrown out of solution on dilution with the solvent. This "flocs" together, settling down on the bottom of the beaker as a sludge. In some cases there is also present a gummy residue which sticks to the glass and will not dissolve in any amount of cold solvent. The supernatant liquid may be decanted carefully and filtered quickly through a Gooch crucible prepared with a thin mat. The remainder may be filtered afterwards. Plugging of the filter frequently occurs, compelling the use of an additional Gooch to take care of the remainder of the sludge. Tared filter paper, previously dried to constant weight may be used instead of a Gooch. The paper hastens filtration appreciably. The only objection to it lies in the difficulty of removing the last traces of oil from around the edges of the paper.

In practically all instances, about two hours and two hundred cc. of solvent appear, from the foregoing table to be sufficient on five grams of material. To be certain that complete precipitation results under these conditions, a small aliquot may be pipetted off from the supernatant liquid and diluted in a separate beaker with three to four times its volume of solvent. Any further deposition here would necessitate the addition of more solvent to the original beaker and require a longer time for setting. The appearance of a slight cloud, however, may mean so insignificant an amount of additional insoluble matter as to be not worth the bother estimating. Any residue adhering to the beaker must be washed with a few portions of solvent, determined separately, and the weight added to that of the residue contained in the crucible or paper. The residues contained in crucible or paper and beaker are dried to constant weight in the oven at 105° to 110° C. at twenty minute intervals. From the combined weight, the percentage of cold petrolic ether insolubles is calculated.

Nature of the Insolubles

THESE residues were examined cursorily to discover their general nature. They were found to consist of a small amount of iron soaps and lime soaps, normally present, as well as any intentionally or accidentally added, dirt, fiber, or meal appearing also in the ethyl ether insolubles, an appreciable amount of saponifiable matter, which, however, does not appear in ethyl ether insolubles and which contains free fatty acids (later found to be oxidized acids) and gummy resinous matter soluble in ethyl ether, thus escaping attention when that solvent is used. This method, therefore, will detect chiefly those impurities not apparent in the customary solubility test with ethyl ether or carbon bisulfide, which are nevertheless matter objected to by the soapmaker. It will, in addition, show up gross impurities above normal and those purposely added.

To determine "oxidized" or hydroxy-acids, the method given by Lewkowitsch[3] may be employed. Five grams

(*Turn to Page 67*)

A woman leads in building a new, modern soap industry in Soviet Russia, Paulina Gemchuzina, head of the Teje Trust, awarded the highest honor of the Soviet Government, the Order of Lenin, for her services in expanding and modernizing the soap industry, and improving the quality of Russian soap. In private life, she is the wife of V. I. Molotov, Chairman of the Council of Peoples' Commissars of the Soviet Union.

Russia Builds a New Soap Industry

By J. OLDER
Moscow

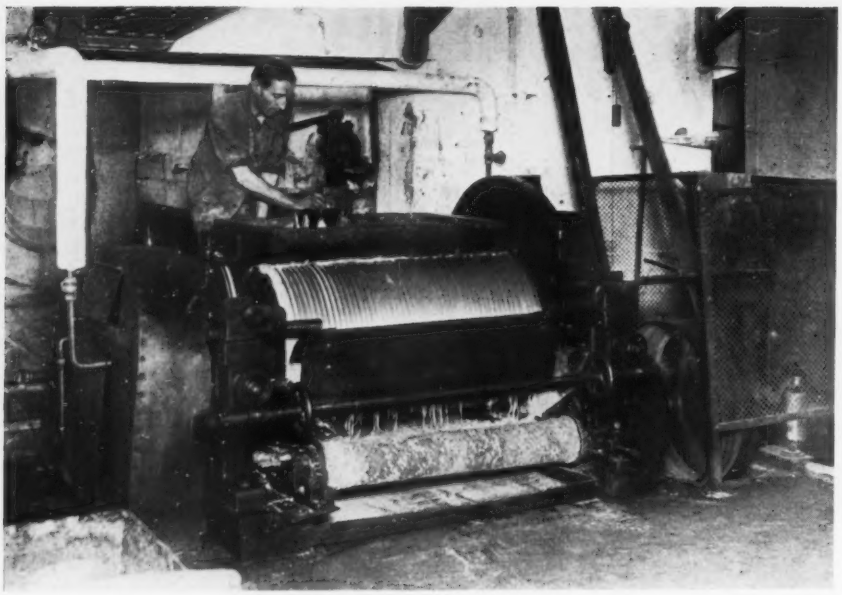
RUSSIAN soap-making during the first third of the twentieth century provides one of those striking comparisons which can be drawn between a backward industry of Czarist days and a scientifically operated and rapidly expanding, if still inadequate, branch of the national economy in the world's first socialist state. In old Russia, a few large plants, such as Schirmer in Moscow, and an enormous number of small ones each employing from one to ten workers, produced all the soap made in the country. Even in the big factories, production processes were extremely backward,—chiefly hand methods,—and working conditions very bad. In the former Schirmer plant, for example, soap was boiled over an open flame, mixed by hand, and ladled out of the kettles. Cooling, done in wooden forms with a capacity of three and one-half tons each, took three weeks. Many of these old factories were illuminated with kerosene lamps, and had practically no ventilation. Not having domestic raw materials, inasmuch as the hydrogenation of fats and vegetable oils was then in an embryonic stage, the pre-revolutionary manufacturers to a large extent used imported fats.

Under such conditions, it is not to be wondered at that the maximum output of soap in former Czarist Russia,—a territory which then included Poland, Finland and the Baltic countries,—comprised 160,000 tons of laundry soap and 10,000 tons of toilet soap a year. But even these totals are enormous in comparison with those for the years of civil war which immediately followed the 1917 Revolution and paralyzed production. After almost complete cessation of work, however, the soap industry of the Soviet Union began to develop at a rapid pace, annually gaining in momentum, as the following table, giving annual output prior to the First Five Year Plan, indicates:

Year (begins Sept. 1)	*Laundry Soap Tons*	*Toilet Soap Tons*
1921-1922	6,643	527
1922-1923	57,481	2,137
1923-1924	99,000	3,663
1924-1925	116,746	7,367
1925-1926	135,067	12,879
1926-1927	151,683	12,035
1927-1928	182,200	19,440

These figures are, of course, only a beginning. Since the Soviet soap industry depends almost entirely upon domestic sources for its raw materials, chiefly vegetable oils, the further development of soap manufacture at a tempo which would swiftly bring it nearer to demand was limited during those years not only by the technological backwarkness of its processes but also by the inability of agriculture to provide sufficient raw materials. The real growth of a modern industry did not begin, therefore, until the era of Soviet machine-building was ushered in by the First Five Year Plan (1928-1932) and its development has been made possible not only by the widespread use of modern machinery, but also by the new fertilization methods which have vastly increased the yield of oil-producing crops.

Fulfillment figures for the First Five Year Plan, and those called for by the end of the second, give a graphic picture of the scope of this development whereby output, though still insufficient, is nearly triple that of the pre-war level and has increased more than 150 per cent



Chilling rolls connected with the drying equipment for the production of toilet soaps at the Svoboda plant of the Soviet soap industry.

since 1928. In 1932, final year of the First Piatiletka (Five Year Plan) soap production totalled 351,208 tons, of which 21,500 were toilet soap. Last year, output of Soviet soap factories amounted to 460,000 tons, 30,000 of which were toilet soap. It should be pointed out that this growth was conditioned not only by the building of new soap and hydrogenation plants and the reconstruction of old ones, but also by the development of chemical branches of Soviet economy such as alkalies and soda, petroleum, and others.

Present production figures, while they indicate that days of acute soap scarcity are over, are acknowledged to be below requirements. With the successful carrying out of the national plan of industrialization and collectivization of agriculture, and with the consequent rise in the material well-being and cultural level of the population,—credited especially to the development of educational, communal health and social institutions,—there has been a steady growth in the demand for soap. To meet it fully, several new factories and hydrogenation plants are now being constructed. They will reach their full production capacity by 1937, final year of the Second Piatiletka, when the program calls for 1,000,000 tons of soap annually.

How is the soap industry organized to perform the tasks assigned to it by the State Planning Commission? The private manufacturer has long since disappeared from the Soviet scene. Like other branches of Soviet economy today, the soap industry is operated on a business basis, though with individual ownership and private profit eliminated, as one unit under a national commissariat, in this case, the Peoples Commissariat of the Food Industry. Its various branches, including oil and fat raw material plants are concentrated under the Chief Administration of the Fat and Vegetable Oil Industry headed by Udarov.

Under this chief administration, in turn, there is a fat and soap department for the actual operation of the industry. This department supervises the various soap-perfume-cosmetics trusts, the largest of which are *Teje* of Moscow, *Lenjet* of Leningrad, and the Gorki, Kazan and Kharkov trusts. Under the trusts, 85 per cent of the entire Soviet soap output is concentrated in plants with an annual capacity of from 25,000 to 70,000 tons. The remaining 15 per cent is made in smaller state and co-operative enterprises. For purposes of distribution, these factories are situated in various parts of the country so that each may serve a particular locality.

TEJE, the largest of the trusts, is a model of the newer Soviet efficiency. At its head is Paulina Semenovna Gemchuzina, an outstanding woman executive of the New Russia, and in private life the wife of Molotov, Chairman of the Council of Peoples Commissars. For her exceptional services in expanding and modernizing the industry and improving the quality of its products, she has received the Soviet Government's highest award, the Order of Lenin.

Under Administrator Gemchuzina, who is in direct charge of planning and supplies, are technical and financial directors as well as a special assistant administrator heading the Workers Supply Department which operates stores, booths, dining rooms and other enterprises for the sale of food and consumers' goods to Teje's thousands of workers. The administrator and her assistants directly supervise the manufacturing plants, in relation to which the executive departments of the trust, staffed by 120 persons, serve principally as sources of technical equipment. Each plant also has its own director and department heads.

Teje also possesses its own distribution facilities for the marketing of its soap, perfumes, eau de cologne, powder and other cosmetics. These sales establishments,

which employ approximately 1,500 of the trust's 2,500 sales people, clerical staff, engineers and trained workers, include 40 wholesale offices situated in the large cities and centers of rural districts to carry on the sale of soap to government and cooperative trading organizations, and a chain of 120 retail stores in various cities of the USSR.

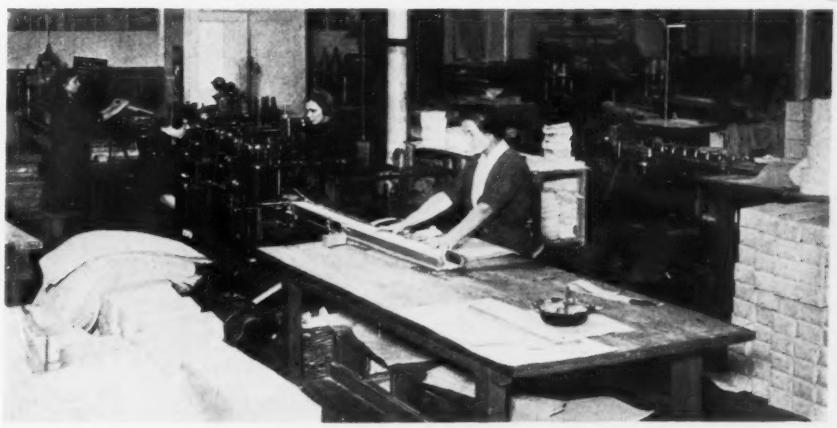
Well-outfitted, modern in their appointments, and efficiently operated from the standpoint of stock and service, these stores are included among the best trading outlets in a retailing system which ranges from the special non-commercial closed and factory supply stores, where soap is purchased on norm at lower prices, through various types of cooperatives to the rapidly developing new government stores operated like Teje's on an open, commercial basis. Such stores are slated to supplant the present dual trading system in the year or two more required for all industries producing consumers' goods to increase their outputs to the point where commodities still difficult to obtain now at reasonable prices, will flow more plentifully and cheaply to the consumer.

In the case of soap, that point is not very distant. While it is impossible because of the dual trading and currency systems to translate accurately rubles into terms of foreign currency (with the exception of the gold ruble used in foreign trade), a study of price action over certain periods is illuminating. Retail prices of soap, once extremely high, have been reduced considerably over a comparatively short period of time. The commercial price of toilet soap now ranges from 80 kopeks (100 to a ruble) to three rubles for 100-gram cakes. These prices represent a 26 per cent reduction during the fourth quarter of last year. The prices on laundry soap, sold unpackaged by weight, is 2.50 rubles for 500 grams of hard soap to 2 and 1.50 rubles for the same quantity of the cheaper grades. Prices on the household soaps are about double those in the remaining closed store systems where those eligible to buy are entitled to two kilograms (2.20 pounds to the kilogram) of medium grade soap at 2 rubles per kilogram. Prices for the few cakes of toilet soap bought on norm at such a store are slightly lower than in the commercial stores. With

These wrapped toilet soaps are glued and further packaged by hand. Finishing conveyor for toilet soaps at one of the newer Soviet plants.

government organizations now giving special attention to the price question, substantial reductions are expected this year.

Current production trends are revealed by this branch of Teje's activities. The trust operates five Moscow soap plants, one hydrogenation plant which is now supplying them with fats, and a powerful new one equipped according to the latest technological developments and scheduled to be completed by April 1. The New Soap Plant, built in 1929 for the manufacture of high-grade laundry soap with a fatty acid content of 72 per cent, is equipped with soap pans with a capacity of 200 cubic meters each, and with large units for working-up the soap. All basic production processes are mechanized. This factory, in addition to its principal product, also has a capacity of 65,000 tons of lower grades of laundry soap which are not stamped into cakes. Three of Teje's four other Moscow soap plants,—old factories which



Machine wrapping of soap in the Soviet factories is at present semi-automatic, but plans call for complete fully automatic equipment as production expands.

were reconstructed, enlarged, and re-equipped, including rebuilding their power plants and storehouses,—manufacture laundry soap, while toilet soap is manufactured in the fourth.

No figure has as yet been set for Teje's capital investments in the entire period of the Second Piatiletka (1933-1937), but large sums are being expended from year to year on the factories of the trust. Last year the total expended was five million rubles, and this year at least as much as that amount will be invested. There will be a considerable increase in capital investments during 1936 and 1937. The chief items are expansion and reconstruction of factories, rationalization measures, labor protection, research and capital repairs.

Possessing a sound technical base and highly qualified technicians and workers, Teje considerably increased its soap production last year over that for 1933. Total output in the latter year was 46,149 tons, and for 1934, 85,000 tons. Toilet soap accounted for 6,589 tons of the total output two years ago, and for 14,000 tons last year. The improvement was qualitative as well as quantitative, especially notable being the improved scent and appearance of the toilet soaps. Teje's leading brands, sold in individually wrapped cakes, include Rond, Cold Cream, Krasny Mark (Red Poppy), Magnolia, Krasnaya Moskva (Red Moscow), Novaya Zarya (New Dawn), Camelia and Glycerine.*

FROM 70 to 75 per cent of the total amount of fats used in the Soviet soap industry are sunflower and cottonseed oils. Naphthenic acids, fish oils, blubber, suet, bone fat and coconut oil are also used. One of the numerous prospecting expeditions now making a study of the country's resources, recently discovered in Soviet Middle Asia huge beds of clay not inferior to the Illinois variety, according to scientists, and when mined it will be made available to the soap and several other industries which can use it and its mineral diatomite.

Soap manufacture in the USSR is strictly controlled by governmnet regulations and established technological conditions. Based on scientific methods in all processes, with general quality, fat content, free alkali and other factors regulated in accordance with definite standards, all contracts between manufacturing units of the soap trusts and marketing organizations stipulate technical specifications with penalties for violations. The first grade toilet soap must contain 75 per cent fatty acids, and the second 70 per cent. The first grade laundry soap, that made at the New Plant, must contain 72 per cent. Fatty acid contents of 60 and 50 per cent are stipulated for other grades of laundry soap, while the first grade washing powder must contain 18 per cent and the second 12 per cent.

In addition to the above grades, until the industry can expand production sufficiently to meet the demand, some filled toiled soaps containing 60 per cent fatty acids and laundry soaps with 40 per cent are being manufactured. At the present time, however, the output of these soaps, especially the former, is decreasing and that of the better quality soaps increasing.

Liquid laundry soap, used principally for industrial and technical purposes, comprises from eight to ten per cent of the total output. Liquid toilet soaps such as quinine soap and shampoo have a fairly wide distribution, their principal customers, of course, being the barber shops. Two thousand tons are now used in the Soviet Union anually. A slightly larger quantity of shaving soap in sticks and powdered form is produced with a fat content of 90 per cent.

All the large and medium-sized soap factories in the USSR are equipped today with fat splitting and glycerine equipment, and modern machines for cutting and stamping. Preliminary operations are almost completely mechanized. Foreign equipment, imported until 1926, has now practically dropped out of the picture. The production of equipment for soap manufacture has been taken over by Soviet machine-building plants, which are now supplying all new equipment for plants in operation

*EDITOR'S NOTE: Samples of all these various wrappers show them to be very well designed, printed and lithographed,—several are very beautiful specimens,—altogether comparable with American, German, English and French wrappers.

Presses and conveying equipment for toilet soaps at the Svoboda plant of the Soviet although a wide improvement on older Russian methods, are not as yet completely mechanized.

Interior of a retail store of the Teje Trust in Moscow, where soaps and cosmetics manufactured by this important Soviet Government unit are sold, and which reflects the progress of the industry and a woman's hand at the head of the trust.

or under construction. In the Teje plants for example, foreign equipment now comprises only from two to three per cent of the total in value. Imported milling equipment which the trust's Svoboda (Freedom) plant used for the manufacture of toilet soaps, has been replaced by more powerful domestic machines of original design. This plant now possesses nine units of such machines, each with a capacity of five tons a shift.

A characteristic and important feature of Soviet production is its scientific branches, from the research institutes maintained by the various group of production units to the laboratories maintained by every factory. Plants in the Teje system spend an average of from 120,000 to 200,000 rubles a year on them, and the laboratory at the Svoboda plant has a staff of twenty persons. These scientific branches of production have two functions. The first is a technical control of manufacture from raw materials through production processes to output. Laboratory records, entered in a special book under seal, are an official government document.

Routine is as follows: When they are received at the factory warehouse, and again when they are sent into the plant, all raw materials and ingredients are subjected to analyis. Tests are also made during the production processes, and following analyses by the chemists, any corrections deemed necessary are made. Only after meeting the approval of the laboratory is the semi-finished product passed on for further processing to the chilling rolls, mills, and other equipment. Titration, fatty acid and alkali content, the existence of unsaponified or unsaponifiable substances are thus checked.

Moreover a staff of factory inspectors systematically control the weight and outer appearance of the finished product. They must examine and put slips with their own number in every box, and they are held legally responsible for the discovery of any defects which may exist. Violations of the decree on standards have occurred. An illustration was the discovery that a large batch of soap at Teje's Factory No. 3 was of inferior quality. Following an investigation, the factory director was discharged for inefficiency. This was the first such occurrence at the factory. Violations of government regulations cannot be regarded as motivated by the desire for personal gain, according to industry officials, but may result from certain organizational shortcomings of an industry still in its formative stages.

In addition to their control function, each factory laboratory has a staff of research engineers and chemists to carry on research in conjunction with scientific institutes. At a cost of 388,000 rubles, a laboratory is now being installed at the Steol factory for research on hydrogenation methods, and other sums were invested last year in developing soap perfuming, and for an experimental laboratory producing synthetic essences.

An older laboratory, attached to the Teje Cosmetic Plant, is pioneering in perfume materials research. Before the Revolution, Russia imported most of her perfume oils, both real and synthetic. In 1925, the Soviet Union spent two and one-half million gold rubles for essential oils purchased abroad. Imports were cut to 100,000 gold rubles by 1932 and production of perfume goods had increased 100 per cent as a result of the work of the Tezhe Experimental Laboratory (which operates on a semi-industrial basis) in working out production methods for more than 80 perfume oils. One of the outstanding achievements of this laboratory, activities of which are important to the soap industry, was the working out of a simpler and cheaper process for synthetic rose oil. This work done by three young women chemists reduced the number of chemical processes from six to three and completely upset a 30-year-old theory. The All-Union Chemical Trust awarded the chemists a premium of 3,000 rubles. The formula has since been pur-

(*Turn to Page* 57)

Soapers Used More Fats in 1934

Oil and Fat Consumption at Soap Kettle 12 Per Cent Above 1933 — Tallow Up 30 Per Cent — Palm Oil Down Sharply — Excise Tax Factor*

WELL OVER a billion and a half pounds of fats and oils were consumed by the American soap industry in 1934, a sharp increase over the figures for 1932 and 1933. Soap manufacturers used 12.4 per cent more oils and fats in 1934 than they did in 1933, and 7.2 per cent more than in 1932. Of the total increase for soap last year over 1933 of 163 million pounds, practically the entire amount was represented by the sharp rise in tallow consumption at the soap kettle. In view of the excise tax on various imported vegetable oils which became effective last May, the jump in tallow consumption was not surprising.

The oil and fat consumption of the United States for all purposes last year was over four billion pounds, more than a half-billion pound increase over the figure for 1933. This striking increase of close to 15 per cent last year came on top of a gain in 1933 of 4.5 per cent over 1932. The largest gain in 1934 was made in fats and oils consumed in lard compound and vegetable shortening.

The soap industry continued to be the largest single consumer of oils and fats in 1934 as in previous years, using a total of 1,634,271,000 pounds all told. This figure includes 159,856,000 pounds of foots, by-products of edible oil refining. The soap industry fat consumption for 1933 totaled 1,475,963,000 pounds, of which 164,700,000 was foots. In 1933, soap accounted for 42 per cent of all fats (including foots) consumed. In 1934, last year, soap manufacturers used slightly under 41 per cent of all fats. In spite of the sharp advance in fat consumption by soapers last year, the soap proportion of the total was slightly less owing to the tremendous increase of fats for edible purposes.

If the fat consumption figures at the soap kettle are an indication of soap production, then the output of soaps of all kinds in 1934 was some 12 per cent over 1933. However, judging from various and sundry reports, buying of oils and fats by soapers over the last quarter of 1934 was heavy, and the end of the year probably found the soap industry as a whole with rather large stocks of fatty raw materials on hand. At the same time, stocks of finished soaps in the hands of manufacturers at the end of the year were probably somewhat larger than they were at the beginning. Considering these facts, the actual production of all soaps last year was likely somewhere around 10 per cent above the tonnage for 1933.

Variations in the consumption of individual oils and fats in 1933 and 1934 naturally were influenced by the excise tax which became effective in May, 1934. A sharp rise in tallow consumption took place as anticipated. From some 509,000,000 pounds in 1933, the figure jumped to 664,000,000 in 1934, an increase of over 30 per cent. During the last half of 1934, imports of tallow increased from almost nothing to five or six thousand tons per month to augment a domestic supply which was held to be 25 per cent below normal.

In spite of the excise tax, coconut oil showed an increase in consumption by soapers in 1934 over 1933, but the total did not reach the high level of 1932. In 1934, 341,124,000 pounds (not including 35,000,000 pounds of foots) went into soap as compared to 322,264,000 in 1933, and 353,527,000 pounds in 1932. It was known that many soapers during the first four months of 1934 worked day and night saponifying coconut oil before the excise tax went into effect. Probably this feverish activity during that period accounts for much of the increase over 1933, although the consumption of coconut during the rest of the year was indicated as normal. The consumption of coconut oil in edible products, especially margarin, showed a decline last year, although the total consumed in the United States for all purposes was slightly higher than in 1933.

In palm oil came the sharpest decline in consumption of any important soap oil. In 1934, soapers used 154,704,000 pounds, while in 1933 they used 187,962,000,—a drop in 1934 of over 21 per cent. This decline in palm oil consumption in 1934 followed a sharp advance in 1933 over 1932. Outside of 17 million pounds in edible products and 12 million for the tin plate industry, all palm oil went to the soap kettle. Palm kernel oil showed a sharp increase in 1934, jumping to 16,000,000 from 6,000,000 pounds in 1933.

Cotton oil consumption was up sharply in 1934 with close to a billion and a half pounds going almost entirely into foodstuffs, the soap kettle taking only some 105,000,000 pounds of foots and soapstock. Grease consumption in soap was up materially to 143,000,000 pounds. Olive foots was slightly less at 30,000,000 pounds. More corn oil was used in soap in 1934, but less soya bean, less sunflower, and less sesame. Whale and fish oil consumption in 1934 was just about the same as 1933 with 100,000,000 pounds.

The following table shows the consumption in pounds of leading oils and fats (not including foots) at the soap kettle for the past three years:

* All figures in this analysis of oil and fat consumption at the soap kettle are based on the annual reports of the Bureau of the Census for 1934 (just issued) and for previous years.

	1932	1933	1934
Coconut Oil	353,527,000	322,264,000	341,124,000
Palm Oil	168,009,000	187,962,000	154,704,000
Olive Foots	30,877,000	31,878,000	30,411,000
Tallow	549,186,000	508,824,000	663,956,000
Grease	143,724,000	124,743,000	142,782,000
Fish-Whale Oil	98,000,000	97,000,000	98,544,000

The detailed consumption table as compiled by the Bureau of the Census for all oils and fats for 1934 follows. Oils subjected to hydrogenation or other treatment for special uses were reported as consumed in the products for which intended. For example, oils treated for soap or for margarin are entered in these columns.

Factory Consumption of Primary Animal and Vegetable Fats and Oils, by Classes of Products, Calendar Year 1934
(Quantities in thousands of pounds)

	TOTAL	Compounds and Vegetable Shortenings	Oleomargarine	Other Edible Products	Soap	Paint and Varnish	Linoleum and Oilcloth	Printing Inks	Miscellaneous Products	Loss Including Foots
Total	**4,028,003**	**1,214,742**	**214,132**	**292,466**	**1,474,415**	**329,894**	**67,811**	**15,544**	**259,143**	**159,856**
Cottonseed oil	1,377,437	1,058,733	54,778	155,343	2,702	18	....	29	3,298	102,536
Peanut oil	14,999	8,837	2,744	854	147	....	....	1	49	2,367
Coconut oil	589,602	9,045	123,678	78,636	341,124	37	....	2	2,128	34,952
Corn oil	61,094	1,895	4	38,630	6,268	404	....	....	4,157	9,736
Soybean oil	20,907	2,735	24	509	1,354	10,451	2,843	59	2,109	823
Olive oil, edible	2,372	....	....	2,188	51	....	....	....	133	....
Olive oil, inedible	8,975	....	....	....	1,953	....	....	....	7,022	..
Sulphur oil or olive foots	30,738	....	....	....	30,411	2	....	....	325	..
Palm-kernel oil	22,601	....	....	4,608	16,516	....	....	....	32	1,445
Rapeseed oil	10,366	122	....	....	994	76	17	....	9,157	....
Linseed oil	258,483	....	....	....	1,022	205,743	32,108	12,606	7,004	....
China wood oil	105,978	....	....	....	35	88,184	12,854	1,660	3,245	....
Perilla oil	16,108	....	....	....	....	9,898	4,481	582	1,147	....
Castor oil	20,188	....	....	....	1,786	2,299	317	62	15,724	....
Palm oil	191,738	16,717	66	538	154,704	3	....	10	*14,835	4,865
Sesame oil	7,403	4,720	....	1,408	466	....	....	....	36	773
Sunflower oil	11,756	901	....	1,003	7,142	631	1,909	....	40	130
Other vegetable oils	5,479	1,626	2	627	1,836	260	....	37	790	301
Lard	14,260	2,635	7,486	3,837	24	....	....	3	184	91
Edible animal stearin	28,703	21,517	3,478	2,474	452	....	....	....	782	....
Oleo oil	26,137	764	21,872	108	85	....	....	....	3,308	....
Tallow, edible	78,909	73,416	....	1,703	1,098	....	....	1	2,558	133
Tallow, inedible	717,368	....	....	....	662,858	105	....	8	54,254	143
Grease	240,154	....	....	....	142,782	76	....	375	96,270	651
Neats-foot oil	4,561	....	....	....	61	16	....	1	4,483	....
Marine animal oils	35,207	304	....	....	33,996	37	....	5	838	27
Fish oils	126,480	10,775	....	....	64,548	11,654	13,282	103	25,235	883

* Includes 12,057 thousand pounds reported by the tin and terne plate industry.

NEW SOAP CODE INTERPRETATIONS

The following interpretations under the Code of the Soap and Glycerine Industry have been made by the Code Authority and approved by the NRA for publication. Further information may be secured by communicating with R. C. Edlund, executive secretary of the Code Authority, 386 Fourth Avenue, New York. The interpretations herewith are the latest ones to be released, all prior interpretations having been published in previous issues of *Soap* as they have been released.

FACTS: We buy soap flakes from a regular soap manufacturer, then mill and perfume the soap before reselling it.

QUESTION: Is milling and perfuming of soap considered as "manufacturing" which would make such operation subject to the Code of Fair Competition for the Soap and Glycerine Manufacturing Industry?

ANSWER: Yes, milling and perfuming of soap for resale is manufacturing within the meaning of the Code of Fair Competition for the Soap and Glycerine Manufacturing Industry.

FACTS: I have a large family and am responsible for the care of my father, who because of business conditions and his age is unable to find work. I employ him in soap making in exchange for his room and board in my home.

QUESTION: Do the provisions of the Code apply to such workers?

ANSWER: Yes. The Code recognizes no difference between relatives or other employees, and all employees are subject to the hour and wage provisions of the Code.

QUESTION: What is the meaning of the terms "days," "weeks," "months," or "years" as used in code provisions limiting the period during which an employee may be classed as a learner or apprentice?

ANSWER: The words quoted mean the respective calendar periods, with the addition of any time lost from the normal full-time work periods of the plant in which the employee is working, as, for example, by reason of cessation of plant operation or inability or unwillingness of the employee to work.

BRITISH SOAP FIRMS EARN MORE

Two prominent members of the Lever Brothers group of soap enterprises report larger profits for the past year. Joseph Crosfield & Sons, which manufactures soap and other cleaning products at Warrington and controls the Erasmic Company, producers of fine toilet soaps, in 1934 earned £748,731 ($3,743,655), compared with £730,041 ($3,650,205) in 1933. Ordinary dividend is maintained at 30 per cent, the carry forward being raised by £71,231 to £157,701.

The other firm is William Gossage & Sons, which ceased soap manufacture in 1932 and now depends on income from allied and subsidiary companies. It has returned a profit of £291,347 ($1,456,735), an increase of £80,801 ($404,005). Dividend on the £700,000 of ordinary capital, all of which is held by Lever Brothers, is raised from 20 to 30 per cent.

New Products a

Two DuPont products in new attractive lithographed metal cans,—Tri-Clene in red, brown and buff, with a brown plastic cap, and Pro-Tek in light blue with dark blue and red,—a fabric cleaner and a hand protector. Containers by American Can.

A new combination which includes a small demonstration bottle of O'Cedar Cream Furniture Polish free with the regular 50 cent size. Includes the offer of a refund after using the small bottle. Product by O'Cedar Corporation, Chicago. Bottles by Owens-Illinois.

For so prosaic a product as dry cleaning soaps, attractively decorated steel pails have become an important type of container. A recently adopted package of the M. Werk Company of Cincinnati. Container by Geuder, Paeschke & Frey Company of Milwuakee.

and Packages

A new Sohio cleaning and spotting fluid in a unique package with a dispenser closure. The brush is a part of the closure, the fluid being permitted to seep out onto the brush by a turn of the cap. Product by Standard Oil Company of Ohio, Cleveland.

Two adaptations of the paper can with metal top and bottom for powdered hand soap and roach powder. The soap by Caldwell's of Pittsburgh and the insecticide by Shef Manufacturing of Union City, N. J. The containers are manufactured by the Canister Company of Phillipsburg, N. J.

◆

Rex Research of Toledo, manufacturers of Fly-Tox household insecticides, put out a new companion product for their well-known fly-spray,— a drain pipe opener, packed in a regulation friction-top can lithographed in red and white.

SOAP PERFUME SPECIALS
by SOAP PERFUME SPECIALISTS

Will 60 or 75 cents perfume 100 pounds of toilet soap? It will, *if* your perfume has been *specially* made by perfumers who have made a lifetime study of soap.

We have built up an entire department along those lines and invite your inquiries.

new

ROSE
GARDENIA
LILAC
ORCHID
JASMIN
SANDAL
BOUQUETS

Price range on above oils $1.50 *to* $4.00 *per lb. All give adequate perfume results in* ¼% *to* 1% *strength.*

van Ameringen-Haebler, Inc.
Aromatic Essentials

315 Fourth Avenue, New York
180 No. Wacker Drive, Chicago
438 West 48th St., Los Angeles
42 Wellington Street, E., Toronto

Factory, Elizabeth, N. J.

American Lavender Oil

FOLLOWING the recent discussion of the lavender oil situation in *Soap* by Dr. Ernest Guenther of Fritzsche Brothers, in which he mentioned the beginnings of an American lavender development on the Pacific Coast, the following communication was received from L. J. Wyckoff of Seattle who is carrying on the work with lavender in the State of Washington in conjunction with the U. S. Department of Agriculture:

"I read Dr. Guenther's article on Lavender Oil in your February issue and appreciate the kind words that he uses in regard to the experimental work that I have been doing with this oil the past few years. I wish to call attention, however, to one point which I am sure is an inadvertence. He mentions the work as being carried on in Oregon, while it really has been confined to the Puget Sound District of Washington. While this distinction does not mean much to the average resident of the East Coast and the general conditions in Western Washington and Oregon are quite similar, the district immediately tributary to Puget Sound is quite distinct from the balance of the area and what might be true of conditions within five or ten miles of the Sound would not necessarily apply to a district a few miles farther back, much less to Oregon conditions.

"This work was started as a hobby about ten years ago and shortly after its inception, an arrangement was made to collaborate with the Department of Agriculture, Division of Drug and Related Plants, Bureau of Plant Industry, who were supervising similar experiments with various plants on behalf of the American Association of Manufacturers of Toilet Articles. Since that time the work has been carried on under their general direction and with very material assistance from them and the Association for whom they were acting.

"The work has been hampered by the necessity of moving the planting as a whole, twice during that time and the set back to the plants resulting from the hard trimming required to keep their bulk down for moving, has prevented the maintenance of a continuous planting and the consequent development which would have given us more conclusive evidence as to the quantities to be secured as the plants approached maturity. Despite this fact, there have been three major plantings, at widely separated points, of some 20,000 plants or more which have been observed for at least two years in each location. These plants were mostly the same plants moved from one location to another as the exigencies demanded but the plantings were large enough to give a good average at each point. In addition smaller plantings, in most cases only a few plants, have been made at other locations to secure comparative results as to growth, effect of soil conditions or other special features. This all relates to true lavender and the last seven years. Previous to that time considerable similar work was done with plants which were found to be hybrids and to produce a low grade oil which was not of so much interest. This part of the work was abandoned some years back, after we were finally able to get some true lavender started. The lavender grown here as an ornamental, although pronounced true lavender, both by nurserymen and botanists is really a hybrid that so closely resembles lavender that it is almost impossible to tell the difference.

"The cooperation between the Department and the Association above referred to was terminated at the end of last year and inasmuch as the Department has no funds available for continuing the experiment, any development of this project from now on is entirely in my hands. Speaking for myself only and with no intention of reflecting any opinion that may be held by Department specialists, I believe that the results secured warrant serious consideration of a commercial development or at least a continuation or expansion of the present planting, but even the latter would require some financing, depending on the rate of expansion. I have exhausted my resources and unless some backing becomes available it will probably be necessary to drop the project as even caring for the few acres now under cultivation will take practically all of the time of the experimenter working with hand tools as has been done, and leaves no time for other occupation.

"As to commercial development, the principal difficulties are: securing a basic supply of plants for propagating, which would require several years time and a good deal of money. In the present case that result has been accomplished. Second a suitable site, which aside from the three districts proved by these experiments, would have to be proved by further experimenting. As most of the areas suitable are logged off lands of rather broken contour the cost of clearing and preparing the ground would be high. In this case the ground is already for the plow and is thoroughly suitable, except for the fact that it is quite weed infested and the cultivation cost would be relatively high the first few years. Assuming a suitable proved location and a reasonable supply of plants for propagating which is the state of the present experiment, one is still faced with the need for financing the further propagation and setting out of a considerable acreage, probably around one hundred acres being the minimum for efficient operation. Labor costs for three years until the plants would produce enough material to warrant commercial distillation, the cost of a processing plant and the necessary machinery for harvesting, etc., and these amounts added to the cost of site and necessary buildings add up to quite a tidy sum.

"These plants here are a little slower in developing than they are in France and no returns could be ex-

pected until the third year, by which time the plantation should be self-supporting. The next two or three years would see a fairly rapid increase in quantities and a crop which should be sufficient to pay a substantial return by the fifth year and each year thereafter. While the evidence as to quantities is far from conclusive, it seems probable that we would produce about the same amounts in tons of green material or pounds of oil per acre that the better plantations in France have done. The principal difference being that the plants are a little slower coming into full bearing here but are probably much longer lived so that replanting would not be required so frequently. The first cost is relatively high and the labor cost (cultivating and hand weeding) until the plants are established is also high. When the plants are thoroughly established this cost drops to a comparatively small figure and the years of increasing returns as the plants get larger should show a comparatively small operating cost.

Considerable work has been done along the line of machine harvesting and several small hand power machines built. These have varied in efficiency and are not really practical except on small plants as too much power is needed to make hand operation satisfactory. They have demonstrated, however, that such cutting is entirely feasible and all that remains is to build a tractor attachment like a small grain header, adapted to our special requirements.

With a pioneer commercial planting really coming into production, there should be no difficulty in persuading the farmers of the district to plant this crop and furnish additional material for the processing plant but one can hardly hope to proceed with this phase of the development, until such a plant and enough of a planting to warrant its construction is assured. I hope that some considerable user of the product may become interested to the extent of financing a development and feel sure that the ultimate results would be satisfactory to all parties."

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Laboratoires Zundel, Joliet Cie. has been organized in Colombes, a suburb of Paris, France, by A. Zundel and H. Joliet, formerly connected with Organico, S. A., Nanterre, France. The new concern will specialize in the manufacture of synthetic perfuming materials, and has been appointed exclusive representative in France for Compagnie Parento, Inc., Croton-on-Hudson, N. Y. Arrangements for representation were completed by Addington Doolittle, president of Compagnie Parento, on his recent trip to France. A line of Parento products will be offered through the new agents to France perfumers and floral products will also be marketed by Compagnie Parento in the future under its own trademark.

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The giant size tube for "Colgate's Rapid Shave Cream" was awarded first prize in the recent package competition conducted by American Management Association in New York. The designer was Simon de Vaulchier.

CHICAGO TRADE NOTES

EDGAR HENDRICKSON, for five years electrical foreman at the Procter and Gamble Chicago factory, was fatally wounded April 1 while protecting his wife from a burglar who had forced his way into their apartment. The killer escaped.

—— ♦ ——

Henry J. McConnon, president of McConnon & Co., Winona, Minn., manufacturers of shampoos and toilet preparations, died suddenly late in March.

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E. L. King, chairman of the board of J. R. Watkins Co., accompanied by Mrs. King, is in Australia. It is reported that Mr. and Mrs. King are planning a rather extended stay and the date of their return to this country is somewhat indefinite.

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George Wrisley, of Allen B. Wrisley Co., Chicago, has recently been elected to the code authority for the Perfume, Cosmetic and Other Toilet Preparations Industry. Mr. Wrisley was elected to fill the vacancy created by the resignation of Howard Lyon, also of Chicago.

—— ♦ ——

The 12th Annual Mid-West Beauty Trade Show, April 1-3, at the Sherman Hotel, Chicago, was well attended this year. Included among the list of exhibitors were Colgate-Palmolive-Peet Co., with a display of their various toilet and shampoo soaps, and Procter and Gamble Co., with a display of Drene, their new shampoo.

—— ♦ ——

Chicago Sanitary Products Co. is now marketing a new floor cleanser. The trade name for this new product is Pynex. It is stated to be especially adapted for painted, tile, rubber, cork, mastic, terrazzo or linoleum covered floors. It is recommended by the manufacturer that a sprayer be used in applying Pynex.

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H. D. Hudson Mfg. Co., Chicago, are now manufacturing a new type electric vaporizer, No. 300. The motor and compressor are completely housed in chromium plated framework. They state that the efficiency of this machine has been increased and that it is quieter in operation due to the use of rubber mounting. The new sprayer is equipped with an adjustable nozzle and has capacity of one quart.

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New officers were elected by the members of the Chicago Drug and Chemical Association at the annual meeting March 28 at the Chicago Athletic Association. The regular ticket was unanimously elected. Frank L. McCartney, re-elected president, announces the following as committee chairmen: Arnold G. Schneider, Victor Chemical Co., membership; F. J. Heil, Grasselli Chemical Co., finance; A. J. Rocca, Gazzolo Drug and Chemical Co., and Dr. Frank B. Kirby, Abbott Laboratories, banquet and recreation; J. A. A. Scott, Merck & Co., golf;

M. F. Charley, Standard Pharmacal Co., welfare. The Lake Shore Athletic Club will be the scene on May 2 of the association's Spring party. It will consist of a dinner dance and show and the inauguration of the new officers.

The March meeting of the Chicago Perfumery, Soap and Extract Association on Tuesday the 26th, at the Hamilton Club, heard George Wrisley talk on recent developments along the legislative front. Mr. Wrisley gave a review of pending legislation, both state and national. Mr. Hall, the association's attorney, added a few remarks about legislative matters. The Annual Spring Party will be held at the College Inn of the Hotel Sherman on May 8.

YARDLEY ACCUSED BY F. T. C.

Yardley of London, Inc., Union City, N. J., has been accused by the U. S. Federal Trade Commission of use of misleading statements in advertising its toilet articles and cosmetics. According to the complaint the defendant advertises its products in such a manner as to create the impression that they are imported, when they are actually manufactured or compounded in the United States, and sometimes of domestic ingredients in whole or in part. Some of the advertising phrases objected to are such as the following: "Straight from Bond Street and fragrant with English lavender." "Yardley's English lavender." and "From their shop in Bond Street, London, Yardley has brought gifts of dignity and charm to you."

TOILET GOODS CONVENTION MAY 21-23

The combined convention of various organizations in the cosmetic and toilet goods manufacturing and importing field, will be held at the Hotel Plaza, New York, May 21st to May 23rd and will be known this year as the Convention of the Entire Toilet Goods Industry. Business sessions will be held all day Tuesday, Wednesday and Thursday, the 21st to 23rd. Charles Kelly, Chairman of the Entertainment Committee has announced that those attending the convention will go to the musical comedy "Thumbs Up" on Tuesday night,—the show to be followed by a supper dance. On Wednesday, there will be a golf tournament at a near-by Long Island course. Thursday evening has been reserved for the annual banquet and dinner dance. In addition to the Associated Manufacturers of Toilet Articles under whose auspices this annual convention has been held for almost forty years, other toilet goods association groups will take part in the meeting this year,—the entire directing group being affiliated with The Committee of the Toilet Goods Industry of which Northam Warren is general chairman.

Eastern Industries, Inc., Harrison, N. J., announce that they are now a regular distributing agency in the Metropolitan area for the stearic acid, red oil and allied products of Emery Industries, Inc., Cincinnati.

SOAPS STILL UNDER GROCERY CODE

NRA has further postponed the effective date of its previous order which would have turned jurisdiction of toilet soaps over to the drug code, with the result that soaps will continue to be priced under the grocery code at least until June 11. This is the second postponement in this conflict and simply means the continuance of the present situation, which is, that so far as NRA regulations are concerned, all laundry, household and toilet soap is sold upon the mark-ups in the Grocery Distribution Codes, which are 2 per cent for wholesalers above invoice or replacement costs, and 6 per cent for retailers above invoice or replacement costs. Soap manufacturers and the grocery trade as well have been opposing strenuously the proposed transfer to the drug code. This was first to become effective on March 13, and later action was postponed for further consideration until April 5. This second postponement now puts the final decision off until June 11.

AMEND COPELAND BILL ON SOAPS

In a discussion of the Copeland Bill in the Senate, April 2, following submission of committee amendments, a further change in the section referring to soaps was adopted at the suggestion of Senator Bennett C. Clark, of Missouri, and with the approval of Senator Copeland. Mr. Clark's amended definition of the word "cosmetic," which was approved by the Senate, is as follows: "The term 'cosmetic' includes all substances and preparations, except soaps and household cleansers for which no medicinal or curative qualities are claimed by the manufacturers or retailers in labels or advertising, intended for cleansing, or altering the appearance of, or promoting the attractiveness of, the person." The Copeland Bill faced an uncertain future at the conclusion of Senatorial discussion, April 5. Senator Clark served notice that he would move to recommit the measure with a view to taking it up paragraph by paragraph with government experts. Proponents of the bill indicated their belief that this was merely a move to delay final enactment. Senator Copeland of New York, commenting on an amendment which would transfer administrative control from the Department of Agriculture to the Federal Trade Commission, said he would rather have the bill dropped than submit to this amendment, as the present law would be preferable to such an amended Copeland Bill.

LEVER INJUNCTION DENIED

Application by Lever Bros. Co. for a preliminary injunction against the National Milling & Chemical Co., Manayunk, Philadelphia, to restrain them from sale of their "Namico Health Soap", which Lever alleges is an imitation of "Lifebouy", was denied recently in the U. S. District Court at Philadelphia. The Lever suit against National Milling names Harry C. Rosenberger, Morris R. Williams, Charles K. Williams and Lester M. Rosenberger as defendants. Unfair competition is charged.

Perfumed for Life

WHEN THEY'RE PERFUMED by FRITZSCHE

Consider the career of a cake of soap. In the course of its life it removes dirt, destroys odors, dissolves grime and grease and practically *lives* in water. *It must wash away everything but its own fragrance.* To produce a fragrance that is subtle, appealing and delicate, yet strong enough to resist the neutralizing action of soap requires long years of experience and great skill. Fritzsche Brothers have both. During 62 years we have acquired a working knowledge of aromatic raw materials so vast that we know at once the type of perfume best suited to any given set of ingredients. Get in touch with us today and let us show you how to perfume your soap for life.

"Fragrance Creates Sales Appeal"

FRITZSCHE Brothers, inc.

164 SO. CENTRAL AVENUE, LOS ANGELES, CAL.

Proprietors of PARFUMERIES de SEILLANS, Seillans, France
FRITZSCHE BROTHERS, of Canada, Ltd., 77-79 Jarvis St., Toronto, Canada

78-84 BEEKMAN STREET
NEW YORK, N. Y.
118 WEST OHIO ST. CHICAGO, ILL.

PERSONAL AND IMPERSONAL

L. D. Snow of Lever Brothers Co., Cambridge, Mass. has been appointed manager of the Hammond, Indiana, plant of the company. Mr. Snow was formerly general traffic manager for Lever and was located at Cambridge. He has been associated with the firm for sixteen years. He succeeds Bruce Vernon as manager at Hammond. Mr. Vernon having resigned to reenter the engineering consulting field.

Z. L. Haynes was elected president of the H and H Cleaner Co., Des Moines, at the annual meeting of the organization, March 21. Other officers are E. C. Haynes, vice-president, M. L. Chateauvert, secretary, and Z. L. Haynes, treasure. John Sweeney, who has been with the company for thirty-four years, has been advanced to the position of plant superintendent in full charge of all manufacturing.

John Hanser Soap Co., Milwaukee, has completed a new addition to its plant which will add substantially to its former productive capacity.

White King Soap Co. has named W. R. Dadisman of Tulsa as its representative in Oklahoma City. Mr. Dadisman has represented the company in Tulsa for a number of years.

S. Bayard Colgate, president of Colgate-Palmolive-Peet Co., sailed last month on a trip to the Far East, accompanied by Mrs. Colgate. They left on the *President Cleveland*, going by way of the Panama Canal and the Pacific Coast.

Soap Products, Ltd., L. I. City, N. Y., is now advertising direct to the public its "Latherizer" and "Latherizer" liquid shaving cream. A radio broadcast program three times weekly is being used to introduce these products. They have been in use by barbers for several years.

Favorite Soap Products Co. has recently been organized in Hartford, Conn., by Blanche Smith and Joseph Gregory to manufacture soap. Officer are located at 153 Sheldon Street.

J. B. Furst, president of the Picture Soap Co., recently joined the Twentieth Century Specialties Corp., 151 Fifth Ave., New York.

Michael Petrick is now associated with the National Milling & Chemical Co., Philadelphia, as a soap maker.

Dr. Martin H. Ittner, chief chemist and director of research for Colgate-Palmolive-Peet Co., has been elected president of the Chemists' Club, New York.

Royal Crown Soaps, Winnipeg, Canada, are reported to be planning a three-story addition to their plant at an approximate cost of $100,000.

Benjamin L. Gobet of L. T. Piver Perfumerie, Paris, recently visited the Montreal agency of the company and then went to Mexico to visit their branch there. While in Canada, he stated that the increase in the consumption of toilet goods in Soviet Russia had been great, but that his firm was annoyed by the large quantities of counterfeits of their goods which were found on sale all over Russia.

Admiracion Laboratories, Inc., Newark, N. J., is bringing out a new soapless pine tar shampoo as a companion product to its "Admiracion" soapless shampoo.

John Sunshine, president of the John Sunshine Chemical Co., Chicago, who recently completed a 12,000 mile trip covering the entire Pacific Coast and the South, stated upon his return that everywhere business showed a marked improvement but the attitude of business men indicated that conditions would be much better were it not for hesitancy and doubt regarding the political situation.

Procter & Gamble Co. advanced the hourly pay rate of 7,500 of its workers by 5c an hour on April 1. At the same time a raise of $2 per week was given to all plant employees engaged in production who are on a weekly basis.

A contempt of court action against Alois Hanser of the Alois Hanser Soap Co., Milwaukee has resulted in a fine of $100 being levied against the defendant. Some time ago Hanser was ordered to discontinue distributing soap flakes in a carton similar to one used by his brother's concern, John Hanser Soap Co., Milwaukee, and it was his continuing to use the disputed carton which was the basis for the contempt action.

The 1935 National Premium Buyers' Exposition will be held at the Palmer House, Chicago, the week of May 6th. A. B. Coffman, Merchandise Mart, Chicago, is manager of the exposition.

National distribution of its "Lazy Man's Cleaner" is planned by Founders Paint Co., Milwaukee.

COLUMBIA

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CAUSTIC SODA
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MODIFIED SODAS
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CALCIUM CHLORIDE

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THE COLUMBIA ALKALI CORPORATION

Executive Sales Offices

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431 - 451 ST. CLAIR ST.
CHICAGO

CAREW TOWER
CINCINNATI

SANTA FÉ TERMINAL BLDG.
DALLAS

Plant at BARBERTON, OHIO

F. F. Theobald has recently been appointed secretary-treasurer and general manager of The Cuyahoga Soap Company, Cleveland. He has been with the company since April 5, 1895, having started at the age of 16 as soap salesman, the youngest in Northern Ohio at the time. During the 22 years previous to his recent promotion he had been assistant manager and solicitor in the rendering division.

Royal Soap Co., Kansas City, Mo., was re-organized recently and new officers elected as follows: G. U. Pritchard, president, T. H. Offenstein, vice-president, Chas. F. Reisch, treasurer, Lee Reeder, secretary, and Raymond Snow, member of the board of directors.

Colgate-Palmolive-Peet Co., plans to increase the price of "Palmolive" soap by 50 cents per gross either on or before April 30, according to an announcement by Manning O'Connor, manager of the toilet articles department. Dealers are being urged to stock up now prior to the increase in price. Higher raw material costs are given as the cause for the advance.

Procter & Gamble Co. is offering two grand prizes of $5,000 each and 562 additional prizes, aggregating $3,500, in a public contest, for the best letters giving the six most practical uses for "Ivory" soap in the home. Winners of the grand prizes may take the cash or use it for the education of their children on a deferred basis.

Diamond Cleanser & Soaps, Ltd., formerly at 376 Dufferin St., Toronto, Canada, has recently taken new quarters at 1190 King Street West.

The advertising account of "Sib", general household cleanser, has been placed with the Cleveland office of Fuller & Smith & Ross, Inc. Strong, Carlisle & Hammond Company, Cleveland, are the manufacturers. Distribution is being expanded through Central and Mid-Western States. Advertising campaign plans have not yet been completed.

Twenty free tours of Europe are being offered by Colgate-Palmolive-Peet Co. in a current contest in which users are to write on "Why I Use and Prefer Palmolive Soap." Winners are given the choice of a tour or $1,000 in cash. Their letters have to be accompanied by three bands from "Palmolive" bars and the name of the dealer from whom secured. The contest provides for awards to dealers also, each dealer selling a winning customer getting $500.

Straaska Laboratories, Los Angeles, makers of "Dr. Straaska's" tooth paste, have appointed Hillman-Shane Advertising Agency, Inc., of that city, to handle their advertising. Commencing March 22, Straaska began a fifteen-minute-a-week radio program to run for thirteen weeks on the Pacific Coast. The campaign features a $10,000 prize contest, offering weekly awards.

STATUS OF EXCISE TAX ON TALLOW

The Bland Bill, H. R. 5854, which has been introduced into Congress and which calls for a three-cent excise tax on all imported tallow as well as olive foots, perilla, rapeseed, chinawood, peanut, and other oils in addition to existing import duties, will not reach the hearing stage for another month at least, according to a report from John B. Gordon, representative of the Bureau of Raw Materials for American Vegetable Oils and Fats Industries. His report stated in part: "It is apparently not the intention of the Ways and Means Committee of the House of Representatives, which must first consider all matters relating to tariffs and taxes, to conduct hearings on this Bill independent of such taxation measures as it may have up for consideration before the present Congress adjourns. . . . Under present conditions it is not likely that the Bland Bill can come up for hearing earlier than late in April, with the probability that it will be at a later date. Despite the fact that hearings have not been called we do not believe that you should delay in registering your protest against the Bland Bill in case you have not done so. The imposition of additional excise taxes would add to the difficulties which have been created by those already levied, these taxes having cost the oils and fats consuming industries millions of dollars through failure to pass the increased production costs on the consumer and resulting in much business being done over a long period of months without any profit."

EXTEND SOAP ON RADIO IN ENGLAND

From London, comes the news that the battle in the soap and household products market between two leading manufacturers, Lever Brothers, Ltd. and Thomas Hedley & Co., Ltd., which has been raging in press advertising, has now been extended to the radio. A few weeks ago it is announced that Hedley's were to launch an advertising campaign for Oxydol from Radio Luxembourg, through Erwin Wasey's new radio department. Now it has been decided to place Sylvan Soap Flakes, another Hedley product, on the air. Hedley is owned by Procter & Gamble Co.

A radio campaign for Rinso, Lever product, has been proceeding for some weeks from the same station. Both firms continue to use the press extensively for their various products. The Sylvan campaign, entitled "Sylvan Sweethearts" began on April 7, and transmissions were made from Radio Normandie and Poste Parisien as well as Radio Luxembourg. The program has been prepared by International Broadcasting Co., Ltd., London and New York, in collaboration with Universal Programmes Corporation, Ltd., and Erwin Wasey, radio department.

Spazier Soap & Chemical Co. is a new concern in Santa Monica, Calif. Operations will be started shortly in their plant at Colorado Ave. and 20th St.

RECORD OF TRADE-MARKS

The following trade-marks were published in the March issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

TRADE MARKS FILED

NEW DEAL—This in solid letters describing paste cleaner. Filed by Clean Surface Products Co., Chicago, April 9, 1934. Claims use since Feb. 2, 1934.

CLEANIZE—This on reverse plate describing upholstery cleanser. Filed by Sherman Products Co., Chicago, Nov. 19, 1934. Claims use since Jan. 3, 1931.

COLORGLO—This in solid letters describing furniture cleaner. Filed by Colorglo Products, Whittier, Cal., Dec. 21, 1934. Claims use since July 21, 1934.

CONTINENTAL—This in solid letters describing shaving cream. Filed by Continental Blade Corp., Brooklyn, Dec. 28, 1934. Claims use since Dec. 5, 1934.

TREET—This in solid letters describing shaving cream. Filed by Treet Safety Razor Corp., Newark, N. J., Dec. 28, 1934. Claims use since Dec. 5, 1934.

PALAMI—This in heavy script describing cleansing preparation. Filed by Palami Co., Burlington, Vt., Jan. 21, 1935. Claims use since June 19, 1929.

MINT-O-BRETH—This on reverse plate describing antiseptic. Filed by White Seal Laboratories, Inc., Grand Rapids, Mich., Aug. 17, 1934. Claims use since Aug. 6, 1934.

ANT-B-GON—This in solid letters describing insecticides. Filed by Ant-B-Gon Products Co., Los Angeles, Dec. 10, 1934. Claims use since July 27, 1933.

MOTHOZONE—This in outlined script describing moth preventives and disinfectants. Filed by Mothozone Co., New York, Dec. 27, 1934. Claims use since July 7, 1913.

DART—This in solid letters, together with arrow and sketches of insects, describing insecticides. Filed by McCormick & Co., Baltimore, Jan. 12, 1935. Claims use since Dec. 1, 1932.

NUVO—This in solid letters describing fabric cleaner. Filed by W-B Chemical Co., New York, Oct. 10, 1934. Claims use since Sept. 1, 1933.

X-PERT—This in solid letters describing wall paper cleaner. Filed by Cleveland Cleaner & Paste Co., Cleveland, Jan. 19, 1935. Claims use since Oct. 15, 1934.

NAP-TA CRYSTALS—This in outlined letters describing household cleanser. Filed by Sunbeam Laboratories, Cleveland, Jan. 31, 1935. Claims use since Dec. 1, 1934.

VINCE—This in solid letters describing dentifrice and antiseptic. Filed by Vince Laboratories, New York, Jan. 15, 1935. Claims use since Sept. 27, 1934.

GLOBE—This in solid letters describing wall paper cleaner. Filed by Climax Cleaner Mfg. Co., Dec. 18, 1933. Claims use since Jan. 1, 1902.

ENSEMBLE—This in solid letters describing toilet soap. Filed by Ensemble Mfg. Co., Washington, D. C., Jan. 27, 1934. Claims use since July 13, 1927.

FOAMALONE—This in tooled letters describing cleaning compound. Filed by Interstate Laboratories, Detroit, July 20, 1934. Claims use since Feb. 1, 1933.

SPEED-KLEEN—This in solid letters describing paste soap. Filed by Speed-Kleen Mfg. Co., New York, Nov. 17, 1934. Claims use since May 1, 1934.

MELOX—This in solid letters describing glass and metal polish. Filed by Joseph P. Rosenlicht, Brooklyn, Jan. 9, 1935. Claims use since Sept. 15, 1934.

GAP—This in outlined letters describing cleaner. Filed by Pawley Chemical Co., Cohoes, N. Y., Nov. 26, 1934. Claims use since Aug. 29, 1934.

TERSUS—This in solid letters describing chemical detergent. Filed by Doak Co., Cleveland, Dec. 19, 1934. Claims use since Nov. 15, 1934.

MILK WHITE—This in reverse on carton describing shoe polish. Filed by Manhattan Kreole Products, Inc., Brooklyn, Jan. 7, 1935. Claims use since 1932.

NAP SHAMPOO — This in tooled letters describing shampoo powder for rugs. Filed by G. E. Wymer Products Co., Dayton, Jan. 7, 1935. Claims use since March 1, 1934.

FOAM-TEX—This on carton describing upholstery and rug cleaner. Filed by Nu-Di Products Co., Cleveland, Jan. 19, 1935. Claims use since Dec. 1, 1934.

TAR-O-FLAKES—This in solid letters describing soaps and insecticides. Filed by Sherwin-Williams Co., Cleveland, Jan. 25, 1935. Claims use since Jan. 5, 1935.

MIGNON'S BOKAY—This in solid letters describing toilet soap. Filed by Los Angeles Soap Co., Los Angeles, Feb. 8, 1935. Claims use since Dec. 29, 1934.

LASTEEN—This in solid letters describing cleaner. Filed by Bert E. Black, Cincinnati, Feb. 12, 1935. Claims use since Jan. 1, 1935.

TRADE MARKS GRANTED

322,318. Concentrated Upholstery and Rug Shampoo. Fischer's Surfa-Saver, Inc., Cincinnati. Filed October 8, 1934. Serial No. 356,875. Published December 18, 1934. Class 4.

322,336. Industrial Cleanser. Du Bois Soap Co., Cincinnati. Filed August 20, 1934. Serial No. 355,185. Published December 18, 1934. Class 4.

322,345. Wall-Paper Cleaner. Wm. Rutherford, Chicago, assignor to H. R. Henderson, St. Louis. Filed April 2, 1934. Serial No. 349,438. Published December 18, 1934. Class 4.

322,353. Urinary Antiseptic. Winthrop Chemical Co., New York. Filed October 26, 1934. Serial No. 357,578. Published December 25, 1934. Class 6.

322,357. Soaps. Lionel Trading Co., New York. Filed October 3, 1931. Serial No. 319,700. Published December 18, 1934. Class 4.

322,366. Tooth Paste. J. R. Brundage, Inc., New York. Filed October 11, 1933. Serial No. 342,335. Published December 11, 1934. Class 6.

322,402. Germicidal Preparation. William L. Bechtold, Newark, N. J. Filed September 8, 1934. Serial No. 355,826. Published December 25, 1934. Class 6.

322,408. Wax Polish. Paper Makers Chemical Corp., Wilmington. Filed September 18, 1934. Serial No. 356,153. Published December 25, 1934. Class 16.

322,421. Insecticide. Star Products Co., Chester, Pa. Filed September 24, 1934. Serial No. 356,387 Published December 11, 1934 Class 6.

322,465. Moth-Proofing Liquid. Sibur Moth Proof Service, Bellingham, Wash. Filed June 9, 1934. Serial No. 352,508. Published December 18, 1934. Class 6.

322,471. Soap. Los Angeles Soap Co., Los Angeles. Filed November 8, 1934. Serial No. 358,020. Published December 18, 1934. Class 4.

322,505. Shaving Cream. Colgate-Palmolive-Peet Co., Jersey City. Filed October 31, 1934. Serial No. 357,715. Published January 1, 1935. Class 4.

322,506. Cleansing Compound. Wonder Products, Canton, Ohio. Filed June 13, 1934. Serial No. 352,637. Published December 25, 1934. Class 4.

322,508. Aluminum Cleaner. Nu-A-Lu Co., Jackson Heights, N. Y. Filed November 1, 1934. Serial No. 357,777. Published December 25, 1934. Class 4.

322,522. Cleaning Powder, Toilet-Bowl Cleaner and Liquid Metal and Glass Cleaner. Mirax Chemical Products Corp., St. Louis. Filed July 16, 1934. Serial No. 353,937. Published December 25, 1934. Class 4.

322,595. Shoe Polish, Dressings and Powders. Cosmola Chemical Co., Cleveland. Filed October 19, 1934. Serial No. 357,321. Published January 1, 1935. Class 4.

322,603. Tooth Powder and Mouth Wash. Dental Products Laboratories, Inc., Springfield, Mass. Filed October 11, 1934. Serial No. 357,080. Published January 1, 1935. Class 6.

322,605. Powdered or Granular Composition to be Mixed with Water to Form Hand Soap Paste. Mix-It Hand Soap Co., West Somerville, Mass. Filed October 11, 1934. Serial No. 357,017. Published December 25, 1934. Class 4.

322,817. Floor Fillers and Finishing Preparation. Homer E. Shufelt, Yankton, S. Dak. Filed November 7, 1934. Serial No. 357,998. Published January 8, 1935. Class 16.

322,862. Soap. F. L. Falck & Co., Pittsburgh. Filed October 15, 1934. Serial No. 357,125. Published January 8, 1935 Class 4.

322,864 Composition Adapted for Use in Washing Fruits Sprayed with Insecticides or The Like to Remove the Spray Residues. W-B Chemical Co., New York. Filed October 10, 1934. Serial No. 356,979. Published January 15, 1935. Class 6.

322,865. Detergent. Du-Rite Chemical Co., Washington, D. C. Filed October 10, 1934. Serial No 356,948. Published January 8, 1935. Class 4.

322,883. Stove Polish. Warren Chemical Co., Fall River, Mass. Filed August 22, 1933. Serial No. 340,938. Published February 27, 1934. Class 4.

322,886. Plastic Moth-Repellent Wall Coating. Fletcher Hall Corp., New York. Filed October 24, 1934. Serial No. 357,454. Published January 1, 1935. Class 6.

322,891. Shoe Cleaner. Ideal Paste & Chemical Co., Cleveland. Filed June 20, 1934. Serial No. 352,885. Published January 15, 1935. Class 4.

322,898. Cleaning Compound. Hendrie & Bolthoff Manufacturing and Supply Co., Denver. Filed July 14, 1934. Serial No. 353,889. Published January 15, 1935. Class 4.

322,924. Shredded Laundry Soap. Prouty-Bowler Soap Co., Des Moines, Iowa. Filed November 9, 1934. Serial No. 358,066. Published January 15, 1935. Class 4.

322,996. Metal Polish. Honor-Brite Corp., Chicago. Filed November 21, 1934. Serial No. 358,481. Published January 15, 1935. Class 4.

322,997. Polish for Eyeglasses. Standard Laboratories, Chicago. Filed November 21, 1934. Serial No. 358,501. Published January 15, 1935. Class 4.

322,999. Porcelain Cleaner and Polish. J. A. Sexauer Mfg. Co., New York. Filed November 22, 1934. Serial No. 358,532. Published January 15, 1935. Class 4.

323,000. Polishing and Cleaning Preparations and Dressings for Boots, Shoes and Leather Goods. Wohl Shoe Co., St. Louis. Filed November 22, 1934. Serial No. 358,538. Published January 15, 1935. Class 4.

323,021 Cleaning Fluid. Charles Parket, New York. Filed September 18, 1933. Serial No. 341,664. Published April 24, 1934. Class 4.

323,025. Borax Soap Granules. Mt. Hood Soap Co., Portland, Ore. Filed November 15, 1934. Serial No. 358,263. Published January 15, 1935. Class 4.

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A firm in Alexandria, Egypt, is interested in obtaining an agency for sale of American toilet soaps in that territory. Interested firms may communicate through the U. S. Bureau of Foreign and Domestic Commerce, mentioning inquiry number 8190.

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Walter E. Barnes has been appointed assistant to F. H. Gordon, vice-president in charge of sales at Lukens Steel Company, Coatesville, Pa. Mr. Barnes joined the Lukens organization in 1910.

Become acquainted with my

New Rapid Saponification Process

(U. S. Pat. App. For)

Complete saponification in 30 minutes without steam. You can finish six charges a day of 2,000 lbs. each or more. From each 100 lbs. of fat used, you will obtain a yield of 130 to 132 lbs. of pure soap, whereas by the usual method your yield does not exceed 116 to 120 lbs. With the high prices of fats and oils today, your profits are limited. Meet higher costs with the unparalleled economy of my new process. Delay in my responding to numerous inquiries has been due to my intensive activity in Europe. As I am now in the United States, send inquiries for further information to

JULIUS SCHAAL

CARE OF LAWRENCE RICHARD BRUCE, INC., 132 W. 46th ST., NEW YORK
OR TO P. O. BOX 88, HUDSON TERMINAL STATION, NEW YORK

Breaking into the English market

The United Kingdom and the British Empire offer profitable fields for sales expansion. Many well-known American manufacturers are concentrating on this market. If you are interested why not become a subscriber to the "Soap, Perfumery and Cosmetics Trade Review"—the only British trade paper produced exclusively for manufacturers of soaps and cosmetics.

The "S. P. C." is more than a trade paper—it provides a thorough marketing service for its subscribers. It will give you help in finding the right manufacturer to produce your goods—it will put you in touch with selling agents and advertising agents. It will collect and forward information and render other useful services entirely without charge. A year's subscription costs you only $3.00 (or $5.00 for 2 years). Why not send in your subscription now for two years? Send us your check or international money order.

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Incorporating The Soap Trade Review

102-5 Shoe Lane, London, E. C. 4

TRADE REVIEW

New Equipment and Bulletins

IF YOU want additional information on any of the items described below or if you want any of the bulletins, catalogs, etc., send the coupon below to the Publishers of SOAP.

MacNair-Dorland Co., Inc.,
254 West 31st St., New York.

Send us additional information on the following as described in SOAP: Numbers.....
Company .....
Address .....
Attention of .....
Business .....

113. U. S. BOTTLERS MACHINERY CO., Chicago, is introducing a new automatic capping machine having a capacity of from 45 to 70 capped units per minute. The machine has built-in micromatic control for regulating speed of operation, eliminating difficulty in synchronizing with other automatic equipment. With this control the machine can be set in a few seconds to any speed desired.

114. FOSTER PUMP WORKS, Brooklyn, has issued a catalog illustrating and describing its complete line of pumping apparatus. Copies available.

115. AMERICAN FLANGE & MFG. CO., New York, has issued a booklet dealing with the properties and advantages of its "Ferro-Therm" metal insulation for use in the field of heat insulation. Copy of booklet available.

116. PATTERSON FOUNDRY & MACHINE CO., East Liverpool, Ohio, has issued an illustrated booklet showing its line of mixers. The company has recently developed a complete new line of horizontal modifications of its mixers, which also employ the same gearless reduction principle in use in the vertical Patterson units. These are available in all sizes, ranging from 1/4 to 100 H.P. Booklet may be obtained on request.

117. BINKS MFG. CO., Chicago, has recently published a new edition of its Bulletin AD-114, outlining and describing the complete Binks line of spray equipment. Included in the line are a number of types of spray guns, for use with both liquid and powdered products, as well as nozzles, exhaust units, etc. Copies of the 32 page booklet are available.

118. F. J. STOKES MACHINE CO., Philadelphia, Pa. A new house organ, "Process News," has just been issued describing new process, filling and packaging equipment offered by this company. It will be issued at intervals during the year and interested firms may have their names added to the mailing list upon request.

119. NEWMAN TALLOW AND SOAP MACHINERY CO., Chicago, is now distributing a new catalog showing its complete line of equipment for the soap, cosmetic, chemical and allied industries. Sixty-five different pieces of equipment are illustrated and described in the catalog, which is printed in both English and Spanish. Copies may be obtained upon request.

New Patents

Conducted by

Lancaster, Allwine & Rommel

Registered Attorneys

PATENT AND TRADE-MARK CAUSES
815 15th St., N. W., Washington, D. C.

Complete copies of any patents or trade-mark registration reported below may be obtained by sending 25c for each copy desired to Lancaster, Allwine and Rommel. Any inquiries relating to Patent or Trade-Mark Law will also be freely answered by these attorneys.

No. 1,989,765, Sodium Metasilicate Detergent. Patented February 5, 1935 by Henry V. Moss, St. Louis, Mo., and Foster Dee Snell, Brooklyn, N. Y., assignors to Swann Research, Inc. A method of producing a detergent which consists in providing a sodium silicate solution, adding caustic soda thereto, agitating and heating the solution to evaporate water therefrom and to yield a solution of sodium metasilicate, cooling and kneading the solution to form a plastic mass, further cooling with disintegration to form a solid product, pulverizing the product, agitating the pulverized product, and spraying it with a higher fatty acid while agitating to form a soap film over the surfaces of the particles.

No. 1,989,981, Insecticide. Patented February 5, 1935 by Clyde C. Hamilton, Highland Park, N. J., assignor to Endowment Foundation, New Brunswick, N. J. An insecticide compound of jelly-like consistency for ants including sugar, honey, a thallium compound, agar not in excess of approximately 1%, and water substantially as herein described.

No. 1,990,383, Cleaning Solution. Patented February 5, 1935 by Howard W. Kent, Concord, and Elbridge H. Gerry and Alexander M. Currier, Lynnfield, Mass., assignors to Sealbrick, Inc., Lynnfield Center, Mass. A composition for use in cleaning the surface of building materials, consisting of forty gallons of soap tree bark extract formed by steeping nine pounds six ounces of soap tree bark in water, one and one-quarter gallons of rosin oil, one and one-quarter gallons of raw linseed oil, one and one-quarter gallons of gum tragacanth solution made by dissolving one and one-quarter ounces of gum tragacanth in one and one-quarter gallons of water, and ten gallons of 22% commercial hydrochloric acid.

(Turn to Page 109)

VICTOR
CHEMICAL WORKS
141 West Jackson Blvd.
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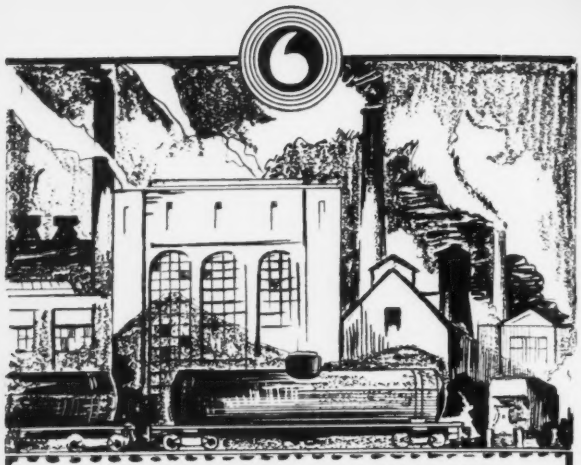
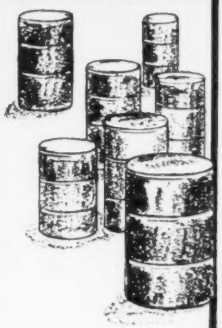


CAUSTIC POTASH

FLAKE	SOLID	LIQUID
88/92%	88/92%	45%



CAUSTIC SODA

FLAKE SOLID LIQUID

Uniform, dependable quality . . . unfailingly! Products of highest standard . . . backed by thorough service . . . yet priced to meet competition.

. . . for manufacturers of

SOAPS
OIL SOAPS
LIQUID SOAPS
DRY CLEANING SOAPS
TEXTILE SPECIALTIES

Write for details and prices

JOSEPH TURNER & Co.
500 Fifth Avenue
New York
SUPPLIERS OF CHEMICALS
FOR OVER 70 YEARS

CONTRACTS AWARDED

Armour & Co. has been granted a contract covering 13,000 lbs. soap powder for U. S. Post Office Department, Washington, at a price of 2.26 cents.

Barrett Co. has been awarded a contract for 1,500 containers of naphthalene for the Brooklyn Army Base at a price of 29.95 cents.

Sherwin-Williams Co. has been awarded a contract covering 2,000 gals. of floor cleaner for the U. S. Post Office Department, Washington, at a price of 42.25c gal.

James Good, Inc., Phila., has been awarded a contract for 1,000 gals. lard oil for Rock Island Arsenal, Ill., at a price of 68.9c gal.

Armour & Co., Chicago, was low bidder in a recent opening covering 200,000 lbs. soap powder for U. S. Navy Bureau of Supplies, with a quotation of $5,074.40. Same concern also low on 460,000 lbs. soap powder, with $11,849, or $11,605 f.o.b. works. R. M. Hollingshead Corp., Camden, bid low on liquid metal polish, with a quote of $4,160 on 71,800 pints, and $8,822.80 on 137,000 pints. Colgate-Palmolive-Peet Co., low bidder on castile soap, entered a price of $2,389 on 37,000 lbs. and $1,813.08 on 27,800 lbs. Conray Products Co., New York, bid 6.69 on 10,000 lbs. chip soap. Procter & Gamble bid $2,480 on 71,600 lbs. laundry soap and $824.60 on 14,000 lbs. white toilet soap.

Bids were entered as follows on 5,000 lbs. toilet soap in a recent U. S. Post Office Department bidding: Procter & Gamble Distributing Co., 7.87c f.o.b. Port Ivory and Chicago; Unity Sanitary Supply Co., New York 9.2c; General Soap Co., San Francisco, 7.23c f.o.b. Tacoma; Armour & Co., Chicago, 7.88c f.o.b. Chicago and 8.64c; f.o.b. New York; Swift & Co., Chicago, 7.55c; Colgate-Palmolive-Peet Co., Jersey City, 2,500 lbs., 7.466c f.o.b. New York and 2,500 lbs., 8c f.o.b. Chicago.

Trade Laboratories have been awarded a contract covering 136,000 tubes shaving cream for the Brooklyn U. S. Army Quartermaster at a price of 4.248c. and 137,000 tubes tooth paste at 3.33c. Kirkman & Son awarded 136,000 cakes toilet soap at 1.49c.

Mt. Hood Soap Co., Portland, Ore., has been awarded a contract for a quantity of chip soap for the U. S. Army Quartermaster at Fort Mason, Calif., at a price of 6.97c per lb.

Newell-Gutradt Co., San Francisco, has recently been awarded a contract for a quantity of scouring soap for the U. S. Army Quartermaster at Fort Mason, Calif., at a price of 4 cents.

Colgate-Palmolive-Peet Co., Jersey City, has been awarded a contract for 500,040 lbs. laundry soap for the Chicago U. S. Army Quartermaster at a price of 3.433 cents.

AWAIT LEVER BRIEF IN "RINSO" SUIT

An extension has geen granted to the attorneys of Lever Bros. Co. in the Lamont patent suit being prosecuted by Procter & Gamble Co. and Colgate-Palmolive-Peet Co. against Lever, allowing the defendant until May 1 to file a reply brief. The Colgate and P. & G. briefs are already in. As soon as the Lever answer is filed, which may be before May 1, Judge Thomas W. Slick will arrange for a further oral argument, which may take two or three days. Following this restatement of the case and a review of the exhibits, Judge Slick will take the case under advisement for final decision.

High points in the plaintiffs' briefs state their position in the case as follows: "The defendant is free to make its 'intermediate Rinso'; it is free to make its present day 'Rinso' formula by solidification of the sprayed particles, as was done in the making of 'Fairy Flakes'; it is free to grind up soap of its 'Rinso' formula to make a package soap or to make chips of the soap and break them up mechanically. The Lamont field, from which we maintain it should be excluded, is that field which includes the puffed, rounded, generally hollow, visible particle form of spray dried soap."

Advertising of Colgate-Palmolive-Peet Co. will be concentrated in the newspaper field this year, according to the statement of S. Bayard Colgate, president of the company, in a recent interview on the Pacific Coast where he stopped on a vacation trip to the Orient. Mr. Colgate said: "We have found in distributing a product of general use that the newspapers reach the greatest number of customers and therefore are of greatest value to our company as an advertising medium."

Calo & Lydon, 90 West Street, New York have organized as distributors of a complete line of wood and gum rosin, pine oil and allied products. The company represents the Dixie Pine Products Co., Hattiesburg, Miss. John H. Calo and Thomas P. Lydon, formerly connected with General Naval Stores Company, are partners in the concern.

Market Report on

TALLOW, GREASES, AND OILS

(*As of April 8, 1935*)

NEW YORK—The recent sharp advance in the prices of soapmaking oils and fats was checked this period, and the leading items in the list were quoted in some cases more than a cent a pound cheaper than the peak prices reported last period. By many factors in the market this movement was regarded as merely a temporary reaction and not indicative of any real change in the general upward trend. The previous advance had been so swift, the opinion was, that some readjustment in values was called for. The generally disturbed condition of the market discouraged activity, and there were but few reports of important business being passed.

COCONUT OIL

Crushers made several reductions in the price of crude coconut oil this period, bringing it down to 5¼c lb. at the close of the period, as compared with 6¼c a month ago. In spite of the readjustment, this important soap oil is still well above its previous price—the current quotation two months ago having been 4½c lb. Coast quotations were down to a basis of 4¾c lb. this period.

CORN OIL

Mill tanks of corn oil were quoted at 9⅜c lb. this period, a reduction of a cent and a quarter from last month. In view of the recent developments in competing product and the generally upset condition of the market, trading was quiet. Sellers were unwilling to press at the lower price and buyers were anxious to observe further developments.

OLIVE OIL

Contrary to the rest of the market, a rather firm tone prevailed in olive oil and olive oil foots this period. Of course this section of the market has not gone through the sharp advance that has affected other oils in recent months, and thus there was no occasion for the reaction which reduced other prices. Foots are quoted currently at 8½c to 8¾c lb.

PALM OIL

Palm oil prices were reduced this period, although the drop was not so great as in some of the other important soap oils. The reason for this is found in the fact that supplies are believed to be quite short on spot.

TALLOW

Tallow, which reached a new high of 7c lb. last period, eased off fractionally this month, but was not affected by the general decline nearly so much as the imported soap fats. Offerings were light and trading quiet. City extra is quoted at 6⅞c lb. Greases were also fairly stable in price this period, holding about at the levels of a month ago.

A report from London gives $72.50 per ton as the price on the recent sale to the Soviet of 15,000 tons of whale oil. The sale was made for the whale oil group represented by Anders Jahre which has so far disposed of 40,000 tons of its Norwegian catch. It is reported that the Soviet may require another 15,000 tons, with the probability that a higher price in the neighborhood of $80 per ton would be asked on the additional quanity.

FAT PRICES UP SHARPLY IN MARCH

A spectacular advance in the index for fat and oil prices was scored in March, the figure moving up about 10 per cent from 103.5 in February to 114.5 in March, according to the Bureau of Raw Materials for American Vegetable Oils & Fats Industries. The oil and fat index for March of last year was 72.5. The price index for all farm commodities was down slightly in March compared to February, as was the index for rosins. The index figures for individual oils and fats compared to last February and March, 1934, are as follows:

	March 1935	February 1935	March 1934
Corn oil	193.2	183.3	94.3
Cottonseed oil	173.7	177.1	76.0
Lard	111.9	110.0	58.0
Oleo oil	140.0	119.4	59.1
Peanut oil	141.2	139.7	65.0
Sesame oil	129.3	127.2	74.1
Soybean oil	162.4	147.5	109.3
Stearin, oleo	111.1	99.6	52.3
Castor oil	97.3	97.3	97.3
Chinawood oil	167.1	117.6	95.2
Coconut oil	62.1	60.3	38.8
Cod oil	76.3	77.3	87.1
Grease	109.6	96.4	53.2
Herring oil		78.1	41.2
Linseed oil	105.3	101.9	103.6
Menhadden oil	117.4	95.1	55.2
Olive oil	103.6	111.4	104.0
Olive oil foots	118.1	111.8	91.2
Palm oil	69.5	62.3	52.9
Palm kernel oil	59.8	51.4	46.5
Rapeseed oil	76.6	74.9	68.0
Tallow	97.1	84.9	48.1
Whale oil	117.8	97.5	103.4

Joseph W. LaBaree, salesman for Swan-Finch Oil Corp., died recently at his home in the Bronx, N. Y. Mr. LaBaree was sixty-one years old and had been with the company for twenty-five years.

WHAT FUTURE FOR OIL PRICES?

A discussion and analysis of the present fat and oil situation with an eye to the future trend of prices . . . a reflection of the views of oil and fat market experts . . . a staff investigation . . . to be published in the next issue of *Soap.*

Market Report on

SOAP AND DISINFECTANT CHEMICALS

(*As of April 8, 1935*)

NEW YORK—The market for soap and disinfectant chemicals was a very quiet one during the period just closed, with few new features of interest. Political developments continue to lend a note of uncertainty to business conditions, and with the failure of the general outlook to show expected improvement, business men in many lines are keeping commitments down to actual production requirements.

ALKALIS

Withdrawals of alkalis on contract slowed up this period, as productive schedules were reduced in many industries. Prices remained the same and were still reported to be firmly maintained.

COAL TAR PRODUCTS

Solvent naphtha was in active demand this period, with stocks unobtainable on spot. Contract requirements are currently about equal to production, leaving no stocks remaining for spot buyers. Business in ball and flake naphthalene was fairly active, as is expected at this season of the year. Buying of crude was somewhat slower, however. Prices were unchanged and firmly maintained.

GLYCERIN

An advance was noted this period in soaps, lye and saponification glycerin, bringing these grades up to 10c and 11c lb., respectively. Substantial quantities of crude glycerin are now being imported, with totals for the first two months of the year aggregating almost two and a half million pounds.

ROSIN

Rosin prices eased off this period, with the darker grades showing the most tendency to drop. Stocks have increased in recent months in spite of light arrivals, and as the season progresses substantial increases in receipts are to be expected.

—— ♦ ——

Fire which broke out early on the morning of March 27 severely damaged the quarters of Fritzsche Bros. Co. at 82-84 Beekman St., New York. The laboratories were completely destroyed, but stocks of oils in the sub-basements were practically untouched. Following the fire the office was moved to the adjoining building at 78-80 Beekman St. temporary laboratory quarters were established in a nearby building and normal deliveries were resumed shortly thereafter. Damage, estimated at $500,000 in early newspaper reports, seems not to have been nearly that serious. The company is understood to be fully covered by insurance.

The Swann Corp., Birmingham, Ala., in which Monsanto Chemical Co. of St. Louis acquired a controlling interest in 1933, is to be absorbed by Monsanto according to plans developed by the directors of the two companies. According to the plan submitted to stockholders, one share of Monsanto common would be exchanged for each four and one-half shares of Swann common.

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The 15th Exposition of Chemical Industries will be held at Grand Central Palace, New York, December 2-7, 1935.

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REGULAR TOILET SOAP NOT COSMETIC

Regular toilet soaps will not be classified as cosmetics under the regulations of the Copeland Food and Drug Bill, according to Senator Copeland, the sponsor of the legislation. Only soaps intended or used primarily for treatment of disease or for cosmetic purposes will come under the bill. These assurances were recently given to the Association of American Soap and Glycerine Producers, according to a report sent to members by Roscoe C. Edlund, general manager of the Association which stated in part as follows: "Senator Copeland has indicated definitely to us that it is not his intention for the bill to include in either cosmetics or drugs, soaps intended and primarily used for ordinary toilet and household purposes. So far as soaps are concerned, his bill, he says, is meant to deal only with special soaps intended and primarily used in treatment of disease or beautifying the person.

"State Legislation: There has been constant danger this year of a mass of regulation and taxation in states. The bills have been aimed at cosmetics and drugs, but have tended to include soaps. How great the danger is may be judged from the fact that state legislation in one form or another—and frequently with taxes at 10 per cent—has now been encountered in more than one-quarter of the states, including Arizona, California, Connecticut, Kentucky, Maine, Maryland, Minnesota, Missouri, North Dakota, Ohio, Oklahoma, Rhode Island, and Utah. We believe we have been successful thus far in preventing the passing of any of these proposals. If the Copeland bill had gone against us, we probably could not keep up that good record. However, with the Copeland bill a precedent for us, the Association feels it is in good position. We do think that attempts to regulate and tax soaps as cosmetics and drugs will probably be made for years to come, but we think if the industry and the Association will keep on the job, it has a good chance to defeat them."

COMMERCIAL OLIVE OIL

WELCH, HOLME and CLARK CO., Inc.

563 Greenwich Street **New York City**

Established 1838

"Raw Materials for Soap and Allied Industries"

Short Story

(With Apologies to Esquire)

Ten business papers claim circulation in the manufacturing field of soaps, chemicals, cosmetics, sanitary products, drugs, etc. SOAP and two chemical engineering papers are the only ones which have memberships in the Audit Bureau of Circulations. The other seven *claim* more circulation than SOAP *proves* with an A.B.C. report.

Market Report on

ESSENTIAL OILS AND AROMATICS

(*As of April 8, 1935*)

NEW YORK—There were a number of price changes this period in the essential oil market, affecting not only a number of natural oils, but several aromatic products as well. The Italian citrous oils still continued firm, following the announcement last period that the Italian government had placed an embargo on imports of citrous oils. Other oils were quoted lower, however, including Ceylon citronella oil, certain grades of lavender, peppermint, spearmint, etc. Cassia oil holds a firm place in the market, with anise oil, both being higher in price due to the increased value of silver.

ANISE OIL

Replacement costs were higher on anise this period due to the increased cost of Chinese exchange, with the result that local suppliers raised quotations in the spot market to a basis of 43c to 46c lb.

BERGAMOT OIL

Bergamot oil continued strong this period, with another advance bringing the price up to $1.50 per pound. The other Italian citrous oils also were in strong position as a result of the Italian Government's announced program of controlling the quality of these products through strict control of imports.

CASSIA OIL

Cassia oil, like anise oil, was also responsive to the higher cost of silver. Spot prices went up to $1.40 per lb. and at one time were higher before competition among suppliers brought them back to this level. This oil is basically in a very strong position, with supplies both in the local and primary market being very light.

CITRONELLA OIL

The spot price of Ceylon oil was dropped to a basis of 27c in drums this period. The reduced price was merely the result of local competition and did not denote any change in what is believed to be a very strong position in the primary market.

LAVENDER OIL

One grade of lavender oil was reduced to a basis of $2.60 per lb. this period. The rest of the list was unchanged and the better grades ranged up to $7.00.

AROMATIC CHEMICALS

A number of lower prices were announced this period on various aromatic products, including acetophenone, cinnamic aldehyde, citronellal, citronellol and phenylethyl alcohol.

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Jean Depres has been elected president of the Perfumery and Cosmetic Institute, succeeding Charles A. Pennock who recently resigned.

"Kenya" geranium oil, a product of the African colony of that name, has appeared on the market within the past year in competition with French oil. Sample shipments of cedarwood oil and peppermint oil have also been shipped from the new Kenya essential oil industry.

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PERFUME SYNTHETICS COST LESS

The reason why American perfuming material buyers have turned to a wider use of synthetics over the past ten years is outlined in an article in the March issue of *The Givaudanian*, house publication of Givaudan-Delawana, Inc., New York, under the title, "The Future Belongs to Synthetics." The sharply reduced cost to the perfumer of American synthetics is illustrated in a table giving comparative large quantity prices for 1924 and 1935. The table in part follows:

	Per Lb. 1924	Per. Lb. 1935
Acetophenone	$3.75	$1.10
Amyl Salicylate	2.50	.62
Aubepine Liquid	5.50	3.10
Benzyl Acetate	1.50	.55
Benzyl Benzoate	1.85	.90
Cinnamic Alcohol	5.50	2.30
Citronellol	6.00	1.85
Geraniol Pure Absolute	4.25	1.75
Irisone Pure	5.00	3.10
Laurine (Hydroxycitronellal)	9.50	2.85
Linalyl Acetate	10.00	3.15
Musk Ambrette	13.50	4.75
Musk Xylol	4.25	1.35
Phenyl Ethyl Alcohol	7.25	3.60
Terpinyl Acetate	1.50	.75
Terpineol	.50	.30

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APPEAL FOR TOILET GOODS FUNDS

The Committee of the Toilet Goods Industry, embracing representatives of the entire toilet goods industry and the three leading trade association groups in the field, has made an appeal for funds to carry on its work. The appeal has been directed especially to those firms in the toilet goods and allied industries which have not as yet made a contribution. The committee has been extremely active in fighting adverse legislation both Federal and state, and is now undertaking an intensive campaign to have the excise tax on cosmetics and toilet goods removed. The committee feels that in view of the success of the candy, jewelry and fur trades along these lines, that through a vigorous fight now, the cosmetic and toilet goods industry can accomplish the same results. It is for this purpose that donations from those who have not yet contributed, are asked. Northam Warren of Northam Warren Corp. is chairman of the committee, and Paul F. Vallee of Roger & Gallet is treasurer. Well-known soap people on the committee include A. E. Johnston of Colgate-Palmolive-Peet, and George A. Wrisley of Allen B. Wrisley.

STEAR-IC ACID

RED OIL
TALLOWS

Controlled Production:

We collect, render and refine all of the raw materials used in our stearic acid and red oil. This close control, not available in any other brand, insures high quality products by eliminating low grade raw materials. Let us submit samples and prices. There is no substitute for quality. Use them in your

Dry Cleaning Soaps
Shaving Soaps
Special Cleaners
Polishes
Liquid Soaps

FANCY - EXTRA and SPECIAL TALLOW
Fatty Acids

THEOBALD
ANIMAL BY-PRODUCTS
REFINERY

KEARNY, N. J.
ESTABLISHED 1914

WARNER *Quality*

PIONEERED FOR NEARLY 50 YEARS

CAUSTIC SODA
HIGHEST GRADE
(ELECTROLYTIC)
IN EITHER SOLID OR LIQUID FORM

CARBON TETRACHLORIDE
REDISTILLED WATER-WHITE
SUPPLIED ALSO IN COMBINATION WITH OTHER SOLVENTS TO MEET INDIVIDUAL REQIREMENTS

TRI-SODIUM PHOSPHATE
FINE GRANULAR AND POWDERED
A FREE FLOWING AND NON-CAKING PRODUCT NATIONALLY KNOWN FOR ITS UNIFORM QUALITY

An opportunity to submit samples and quotations is solicited

WARNER
CHEMICAL COMPANY
Pioneer Producers 1886

CHRYSLER BUILDING, NEW YORK CITY
155 E. SUPERIOR ST., CHICAGO
70 RICKARD ST., SAN FRANCISCO

EXCLUSIVE SALES AGENTS for WESTVACO CHLORINE PRODUCTS, Inc.

CURRENT PRICE QUOTATIONS

(As of April 8, 1935)

Minimum Prices are for car lots and large quantities. Price range represents variation in quotations from different suppliers and for varying quantities.

Chemicals

Acetone, C. P., drums	lb.	$ .11	$ .12½
Acid, Broic, bbls., 99½%	ton	95.00	100.00
Cresylic, 97½ dk., drums	gal.	.43	.44
97-99%, pale, drums	gal.	.46	.47
Low boiling grade	gal.	.64	.65
Oxalic, bbls.	lb.	.11½	.12¼
Adeps Lanae, hydrous, bbls.	lb.	.16	.18
Anhydrous, bbls.	lb.	.17	.19
Alcohol, Ethyl, U. S. P., bbls.	gal.	4.16	4.28
Complete Denat., No. 5, drums, ex.	gal.	.35½	.43½
Alum. Potash lump	lb.	.03½	.03¾
Ammonia Water, 26°, drums, wks.	lb.	.02½	.02¾
Ammonium Carbonate, tech., bbls.	lb.	.08	.12½
Bleaching Powder, drums	100 lb.	2.15	3.50
Borax, pd., cryst., bbls., kegs	ton	50.00	55.00
Carbon Tetrachloride, car lots	lb.	—	.05¼
L. C. L.	lb.	.07	.08½
Caustic, see Soda Caustic, Potash Caustic			
China Clay, filler	ton	10.00	25.00
Cresol, U. S. P., drums	lb.	.11	.11½
Creosote Oil	gal.	.11½	.12½
Feldspar (200 to 325 mesh)	ton	14.00	15.00
Formaldehyde, bbls.	lb.	.06	.07
Fullers Earth	ton	15.00	24.00
Glycerine, C. P., drums	lb.	.14	.14½
Dynamite, drums	lb.	.13¾	.14¼
Saponification, drums	lb.	.10	.11
Soap lye, drums	lb.	.09½	.10
Hexalin, drums	lb.	—	.30
Kieselguhr, bags	ton	—	35.00
Lanolin, see Adeps Lanae.			
Lime, live, bbls.	per bbl.	1.70	2.20
Mercury Bichloride, kegs	lb.	.71	.76
Naphthalene, ref. flakes, bbls.	lb.	.04¾	.05¼
Nitrobenzene (Myrbane) drums	lb.	.09	.11
Paradichlorbenzene, bbls., kegs	lb.	.16	.25
Petrolatum, bbls. (as to color)	lb.	.02	.07¼
Phenol, (Carbolic Acid), drums	lb.	.14¼	.16
Pine Oil, bbls.	gal.	.59	.64
Potash, Caustic, drums	lb.	.06¼	.06½
Flake	lb.	.07	.07¼
Potassium Carbonate, solid	lb.	.07¼	.09½
Liquid	lb.	.03½	.03¾
Pumice Stone, powder	100 lb.	3.00	4.00
Rosins (600 lb. bbls. gross for net)—			
Grade B to H, basis 280 lbs	bbl.	4.65	5.55
Grade K to N	bbl.	5.55	6.15
Grade WG and X	bbl.	6.50	7.50
Wood	bbl.	4.25	5.85
Rotten Stone, pwd. bbls.	lb.	.02½	.04½
Silica	ton	20.00	27.00
Soap, Mottled	lb.	.04⅛	.04⅜
Olive Castile, bars	lb.	.13	.19
powder	lb.	.23	.30
Olive Oil Foot	lb.	.07	.07½
Powdered White, U. S. P.	lb.	.19	.21
Green, U. S. P.	lb.	.06½	.08
Tallow Chips	lb.	.07¼	.07¾
Whale Oil, bbls.	lb.	.05	.06
Soda Ash, cont., wks., bags, bbls.	100 lb.	1.23	1.50
Car lots, in bulk	100 lb.	—	$1.05
Soda Caustic, cont., wks., sld.	100 lb.	—	2.60
Flake	100 lb.	—	3.00
Liquid, tanks	100 lb.	—	2.25
Soda Sal., bbls.	100 lb.	1.10	1.30
Sodium Chloride (Salt)	ton	11.40	14.00
Sodium Fluoride, bbls.	lb.	.07¼	.08¾
Sodium Hydrosulphite, bbls.	lb.	.19	.20
Sodium Silicate, 40 deg., drum.	100 lb.	.80	1.20
Drums, 52 deg. wks.	100 lb.	1.35	1.75
Tar Acid Oils, 15-25%	gal.	.21	.24
Trisodium Phosphate, bags, bbls.	lb.	.03	.03½
Zinc Oxide, lead free	lb.	.06	.06¼
Zinc Stearate, bbls.	lb.	.20	.22

Oils — Fats — Greases

Castor, No. 1, bbls.	lb.	.10¼	.11
No. 3, bbls.	lb.	.09¾	.10½
Coconut			
Manila, tanks, N. Y.	lb.	.05¼	Nom.
Tanks, Pacific coast	lb.	.04¾	.05
Cod, Newfoundland, bbls.	gal.	—	.36
Copra, bulk, coast	lb.	—	.02¾
Corn, tanks, mills	lb.	.09¾	Nom.
Bbls., N. Y.	lb.	.11	Nom.
Cottonseed, crude, tanks, mill	lb.	.09¼	.09½
PSY	lb.	—	Nom.
Degras, Amer., bbls.	lb.	.05¼	.06
English, bbls.	lb.	.05½	.06½
Neutral, bbls.	lb.	.09	.12
Greases, choice white bbls., N. Y.	lb.	.07½	.08¼
Yellow	lb.	.06½	.06⅝
House	lb.	.06½	.06⅝
Lard, City	lb.	.14	.14¼
Compound tierces	lb.	.12¾	.13
Lard Oil,			
Extra, bbls.	lb.	—	.11½
Extra, No. 1, bbls.	lb.	—	.11
No. 2, bbls.	lb.	—	.10¼
Linseed, raw, bbls., spot	lb.	.0950	.0990
Tanks, raw	lb.	—	.0890
Boiled, 5 bbls. lots	lb.	—	.1070
Menhaden, Crude, tanks, Balt.	gal.	.30	Nom.
Oleo Oil, No. 1, bbls., N. Y.	lb.	.14½	—
No. 2, bbls., N. Y.	lb.	.13¾	—
Olive, denatured bbls., N. Y.	gal.	.85	.86
Foots, bbls., N. Y.	lb.	.08½	.08¾
Palm	lb.	.05	.05½
Palm Kernel, casks, denatured	lb.	.04¾	Nom.
Peanut, domestic tanks	lb.	.09½	Nom.
Red Oil, distilled bbls.	lb.	.09⅛	.10½
Saponified bbls.	lb.	.09⅛	.10½
Tanks	lb.	—	.08¼
Soya Bean, domestic tanks, N. Y.	lb.	—	.09½
Stearic Acid,			
Double pressed	lb.	.11¼	.12¼
Triple pressed, bgs.	lb.	.14¼	.15¼
Stearine, oleo bbls.	lb.	.11½	.11¾
Tallow, special, f.o.b. plant	lb.	.06¾	—
City, ex. loose, f.o.b. plant	lb.	.06⅞	—
Tallow, oils, acidless, tanks, N. Y.	lb.	—	.10¼
Bbbls., c/l N. Y.	lb.	—	.10¾
Whale, refined	lb.	.07¾	.08

CASTOR OIL
COCOANUT OIL
CORN OIL
COTTONSEED OIL
LARD OIL
NEATSFOOT OIL
OLEIC ACID
-RED OIL
OLIVE OIL
OLIVE OIL FOOTS
PALM OIL
PALM KERNEL OIL
PEANUT OIL
RAPESEED OIL
ROSIN
SALAD OIL
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TALLOW

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BORAX
BICARBONATE OF SODA
CARBON TETRACHLORIDE
CALCIUM CHLORIDE
CAUSTIC SODA
CAUSTIC POTASH
DYES
DISODIUM PHOSPHATE
GLAUBERS SALTS
GLYCERINE
METASILICATE
OXALIC ACID
POSTASSIUM CARBONATE
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SALT
SAL SODA
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SODA ASH
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(As of April 8, 1935)

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Almond, Bitter, U. S. P.	lb.	$2.00	$2.50
Bitter, F. F. P. A.	lb.	2.25	2.75
Sweet, cans	lb.	.58	.60
Anise, cans U. S. P.	lb.	.43	.46
Apricot, Kernel, cans	lb.	.22	.25
Bay tins		1.25	1.50
Bergamot, coppers	lb.	1.50	1.70
Artificial	lb.	1.00	1.30
Birch Tar, rect. tins	lb.	.65	.70
Crude, tins	lb.	.12	.16
Bois de Rose, Brazilian	lb.	1.25	1.40
Cayenne	lb.	2.80	2.90
Cade, cans	lb.	.26	.30
Cajuput, native, tins	lb.	.50	.60
Calamus, tins	lb.	3.25	3.50
Camphor, Sassy, drums	lb.	—	.19
White, drums	lb.	—	.20
Cananga, native, tins	lb.	2.50	2.55
Rectified, tins	lb.	2.95	3.00
Caraway Seed	lb.	1.90	2.20
Cassia, Redistilled, U. S. P.	lb.	1.40	1.45
drums	lb.	—	1.35
Cedar Leaf, tins	lb.	.57	.70
Cedar Wood, light, drums	lb.	.22	.25
Citronella, Java, drums	lb.	.31	.36
Citronella, Ceylon, drums	lb.	.27	.29
Cloves, U. S. P., tins	lb.	.90	.92
Eucalyptus, Austl., U. S. P., cans	lb.	.27	.30
Fennel, U. S. P., tins	lb.	1.00	1.25
Geranium, African, cans	lb.	4.75	7.25
Bourbon, tins	lb.	4.50	6.40
Hemlock, tins	lb.	.70	.75
Lavender, U. S. P., tins	lb.	2.60	7.00
Spike, Spanish, cans	lb.	1.20	1.60
Lemon, Ital., U. S. P.	lb.	1.30	1.60
Lemongrass, native, cans	lb.	.85	1.10
Linaloe, Mex., cases	lb.	1.35	1.50
Nutmeg, U. S. P., tins	lb.	1.20	1.35
Orange, Sweet W. Ind., tins	lb.	1.90	2.00
Italian cop.	lb.	1.85	3.00
Distilled	lb.	.65	.70
Origanum, cans, tech.	lb.	.60	.70
Patchouli	lb.	2.75	3.50
Pennyroyal, dom.	lb.	1.85	1.90
Imported	lb.	1.35	1.70
Peppermint, nat., cases	lb.	2.65	3.15
Redis., U. S. P. cases	lb.	2.90	3.35
Petit, Grain, S. A. tins	lb.	1.05	1.10
Pine Needle, Siberian	lb.	.85	1.20
Rose, Natural	oz.	5.50	18.00
Artificial	oz.	2.00	3.00
Rosemary, U. S. P., tins	lb.	.32	.38
Tech., lb. tins	lb.	.28	.35
Sandalwood, E. Ind., U. S. P.	lb.	5.00	5.50
Sassafras, U. S. P.	lb.	.75	1.00
Artificial	lb.	.45	.50
Spearmint, U. S. P.	lb.	1.65	1.75
Thyme, red, U. S. P.	lb.	.58	1.02
White, U. S. P.	lb.	.65	1.10
Vetivert, Bourbon	lb.	7.50	8.50
Java	lb.	16.00	20.00
Ylang Ylang, Bourbon	lb.	4.60	7.00

Aromatic Chemicals

Acetophenone, C. P.	lb.	$1.25	$2.25
Amyl Cinnamic Aldehyde	lb.	1.75	2.50
Anethol	lb.	1.00	1.10
Benzaldehyde, tech.	lb.	.60	.65
U. S. P.	lb.	1.10	1.30
Benzyl, Acetate	lb.	.60	1.00
Alcohol	lb.	.75	1.15
Citral	lb.	2.55	2.65
Citronellal	lb.	2.05	2.50
Citronellol	lb.	2.25	2.70
Citronellyl Acetate	lb.	4.50	7.00
Coumarin	lb.	3.10	3.30
Cymene, drums	gal.	.90	1.25
Diphenyl oxide		.85	1.25
Eucalyptol, U. S. P.	lb.	.62	.65
Eugenol, U. S. P.	lb.	2.00	2.50
Geraniol, Domestic	lb.	1.25	2.00
Imported	lb.	2.00	3.00
Geranyl Acetate	lb.	3.00	3.50
Heliotropin	lb.	2.00	2.10
Hydroxycitronellal	lb.	3.50	9.00
Indol, C. P.	oz.	2.00	2.50
Ionone	lb.	3.60	6.50
Iso-Eugenol	lb.	3.00	4.25
Linalool	lb.	1.65	2.25
Linalyl Acetate	lb.	1.85	4.25
Menthol	lb.	3.50	3.60
Methyl Acetophenone	lb.	2.50	3.00
Anthranilate	lb.	2.15	3.20
Paracresol	lb.	4.50	6.00
Salicylate, U. S. P.	lb.	.40	.45
Musk Ambrette	lb.	4.75	6.00
Ketone	lb.	5.00	6.50
Xylene	lb.	1.50	2.50
Phenylacetaldehyde	lb.	4.80	8.00
Phenylacetic Acid, 1 lb., bot.	lb.	3.00	4.00
Phenylethyl Alcohol, 1 lb. bot.	lb.	4.00	4.50
Rhodinol	lb.	5.75	8.00
Safrol	lb.	.54	.58
Terpineol, C. P., 1,000 lb. drs.	lb.	.33	.35
Cans	lb.	.36	.37
Terpinyl Acetate, 25 lb. cans	lb.	.80	.90
Thymol, U. S. P.	lb.	1.40	1.50
Vanillin, U. S. P.	lb.	3.00	3.50
Yara Yara	lb.	1.30	2.00

Insecticide Materials

Insect powder, bbls.	lb.	.34	.37
Concentrated Extract			
5 to 1	gal.	2.05	2.10
15 to 1	gal.	5.75	6.00
20 to 1	gal.	7.80	7.85
30 to 1	gal.	11.55	11.60
Derris, powder—4%	lb.	.43	.46
Derris, powder—5%	lb.	.48	.51

Gums

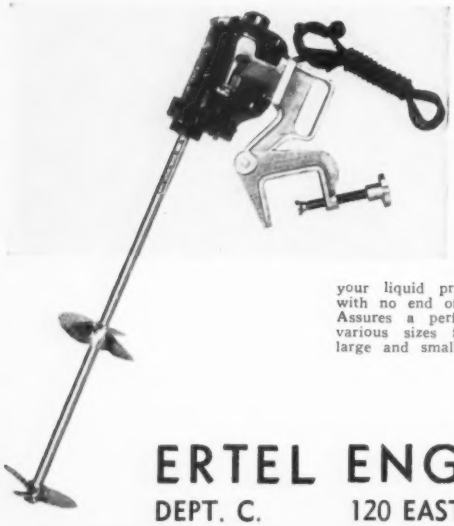
Arabic, Amb. Sts.	lb.	.09	.09½
White, powdered	lb.	.13	.13½
Karaya, powdered No. 1	lb.	.08	.09
Tragacanth, Aleppo, No. 1	lb.	1.15	1.20
Sorts	lb.	.11	.12

Waxes

Bees, white	lb.	—	.33½
African, bgs.	lb.	.21	.22
Refined, yel.	lb.	.25	.26
Candelilla, bgs.	lb.	.13	.14
Carnauba, No. 1	lb.	.32	.33
No. 2, yel.	lb.	.31	.32
No. 3, chalky	lb.	.19	.21
Ceresin yellow	lb.	.36	.38
Paraffin, ref. 125-130	lb.	.03⅜	.04¼

Cloudy Liquid Soap!

People will not buy cloudy liquid soaps and shampoos even though they may do the work just as well. If you want to make clear, sparkling products, send us a sample of your cloudy liquid and let us show you what an Ertel filter can do. They are built in all sizes, suitable for any capacity . . . and do an equally good job on fly sprays.



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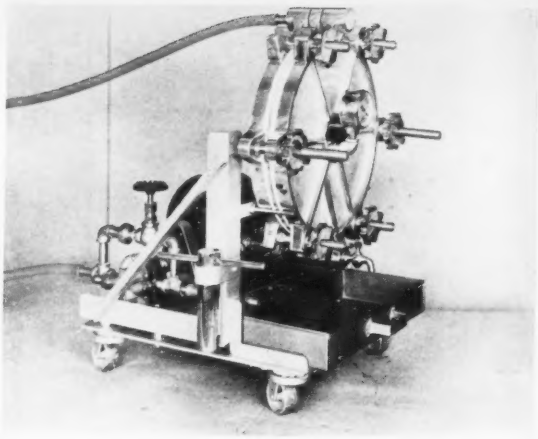

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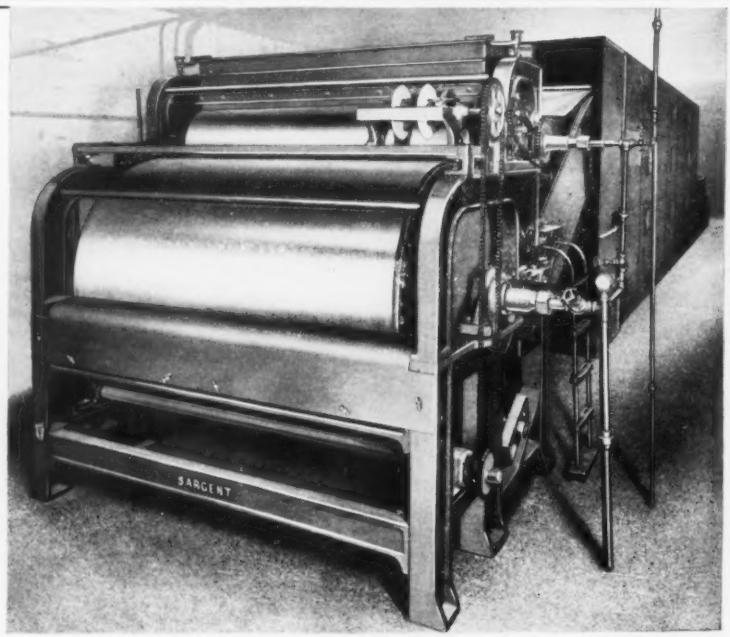
New!..

a Soap Chilling Roll and Drying Machine



AS the title indicates, the Rolls are NEW and the entire machine is NEW, many valuable improvements having been perfected until this latest Sargent development is now one of the very finest Rolls obtainable.

To the soap manufacturer, the most important angle is to have a *thin, uniform chip* . . . readily accomplished by these new Rolls being expertly machined, ground and set. Finest grade of cast iron. Vari-speed controls on both Rolls insures easy adjustment . . . every part accessible. Drive improvements reduce the horsepower used. Changes made at a minute's notice. The Dryer is entirely re-designed. Its housing gives better insulation and cuts down steam consumption per hour. Other valuable changes have been made in the circulating and exhaust air systems . . . and all *fans* are *direct motor driven.*

C. G. SARGENT'S SONS CORP. GRANITEVILLE MASS., U. S. A.

RUSSIAN SOAP INDUSTRY

(*From Page 29*)

chased for foreign use by manufacturers in France, Germany and Switzerland.

Despite the fact that the successful reorganization of agriculture opens up favorable prospects for the further expansion of the industry's raw material base, the Central Research Institute of the Fat Industry, with its branches and factory laboratories, is investigating the possibility of using certain substitutes for vegetable oils without affecting the quality of certain grades of laundry soaps.

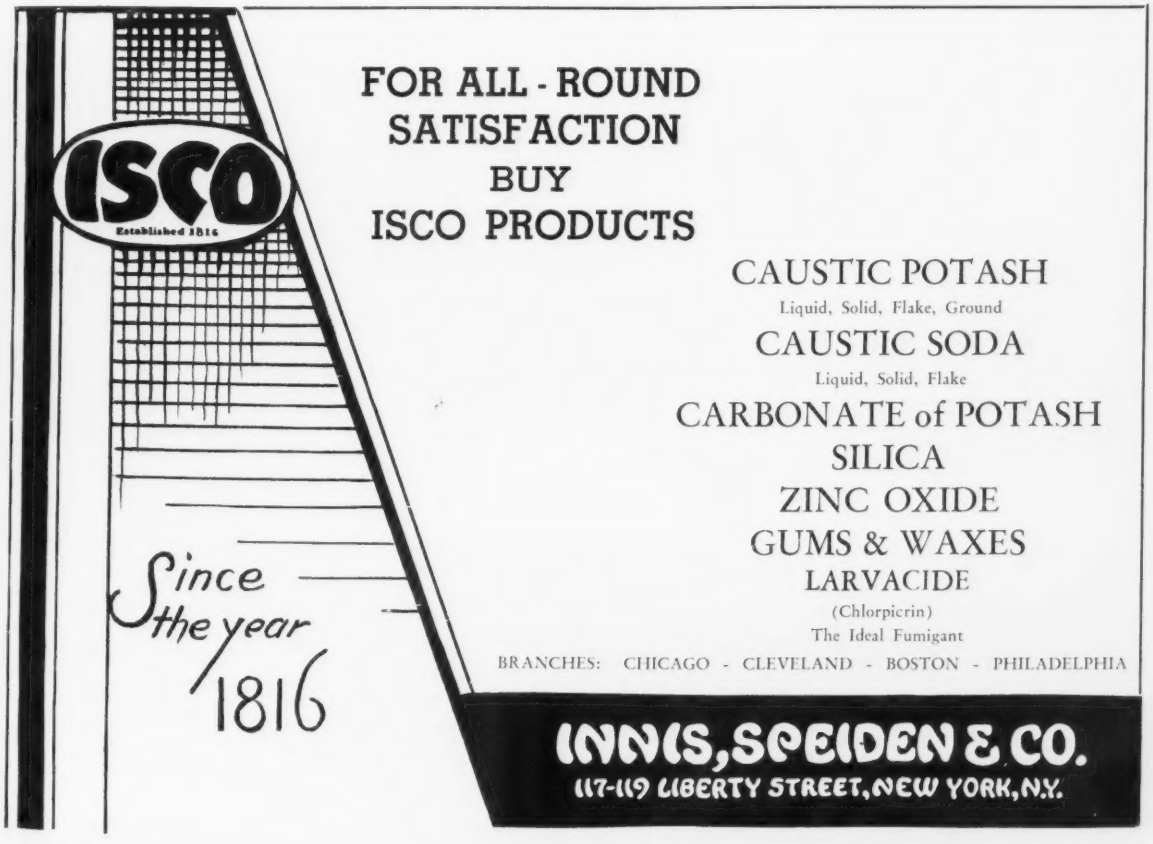
WORKING conditions characteristic of the new Soviet industry obtain in the various units of the soap trusts. There are five days of work and one of rest in a six-day week. Except for certain shops which have a six-hour day, the seven-hour working day has been established in all branches of the soap industry. Annual vacations (with pay) of from two weeks to a month, depending upon the type of work and length of employment, are given all workers, and there are additional paid vacations for the performance of socially valuable duties. Two months with pay both prior to and following childbirth are given women workers, and each production unit expends a sum equal to 20 per cent of the wage fund annually for social insurance. It also contributes to a dwelling-construction fund for its workers and to the maintenance of nurseries for their children. Women, incidentally, form a large percentage of the workers in soap factories and their research institutions.

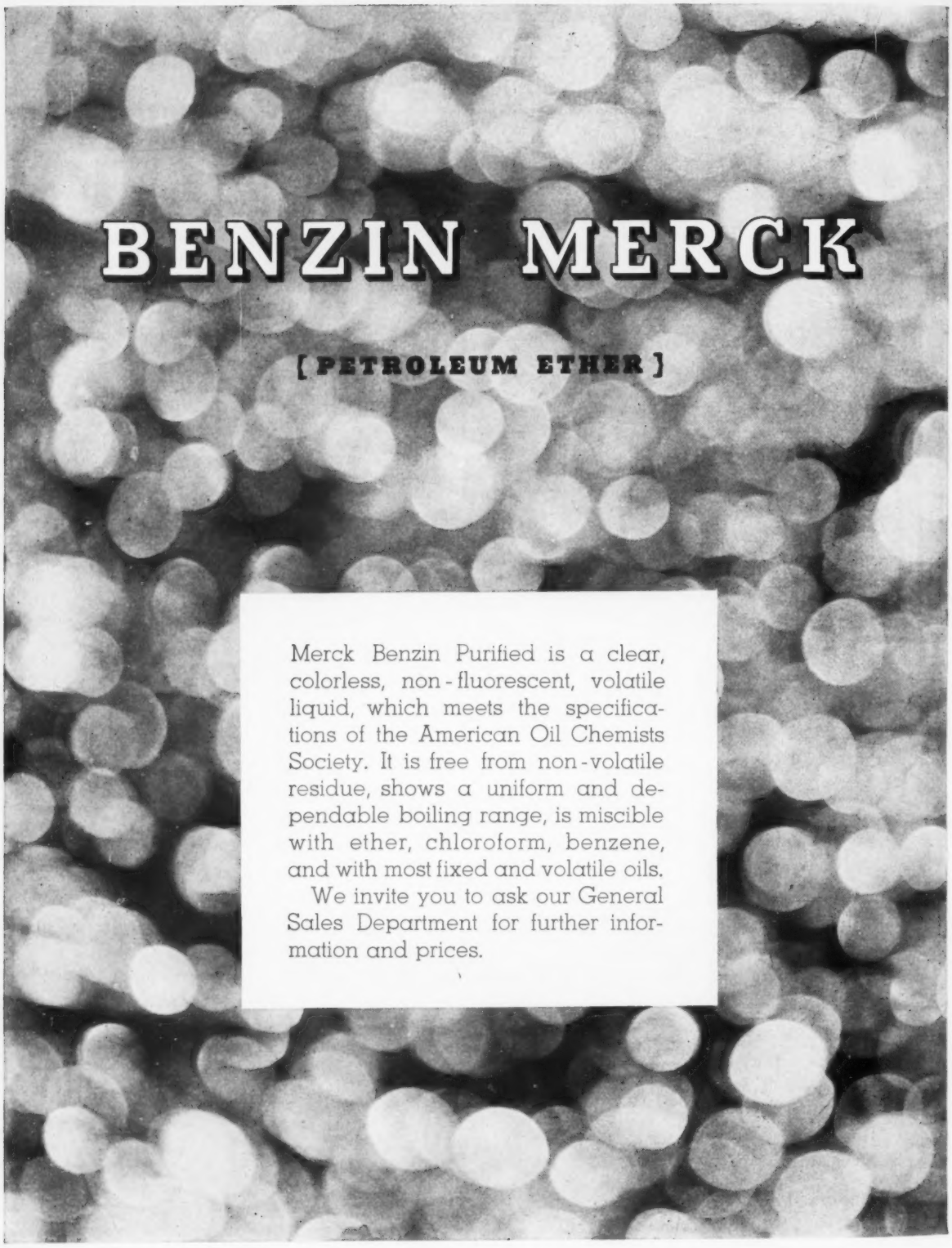
Every large-scale soap enterprise also maintains, generally on its premises, dining rooms, clinics, kindergartens, clubs and other cultural institutions. At the Svoboda factory for example, a huge club, with an auditorium for 2,000, a movie theater, gymnasium and library has been built.

Taking the 1931 level as 100, wages of soap industry workers had increased 30 per cent by the end of last year. In addition to absolute increases, effected as rapidly as the development of Soviet national economy allows, workers receive premiums for overfulfilling the plan on qualitative indices, lowering production costs and improving quality, and also for efficiency proposals, which are frequently developed by the workers themselves. They hold frequent production conferences to discuss concrete shortcomings and methods of eliminating them.

With personal and social incentives, they are revealing a keen interest in improving quality and production methods. The power of public opinion, expressed in no mincing terms in the Soviet press on such matters as quantity and quality of consumers' goods, is also playing an important role in the development of the Soviet soap industry.

Worthy Products Co., New Bedford, Mass., has recently occupied new quarters at 61 Capitol Street.

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PRODUCTION SECTION

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, *Oil & Fat Industries.*

Floating Soaps

PROBLEMS pertaining to the production of floating soap by aeration and by modification of the composition have been discussed by Harold Silman in a recent issue of *The Perfumery and Essential Oil Record* of London. The earliest attempts at making soap that would float succeeded by means of imbedding cork within the soap cake. Another way was to arrange a strip of metal inside the block of soap in such a way that an air-space was formed. Such methods have long since been abandoned, since the cake becomes unusable while a considerable amount of soap still remains.

Modern floating soaps are manufactured in such a way as to reduce the density of the soap itself, usually by aerating the soap, or by incorporating a filler of low specific gravity. The process of aerating soap is fairly simple, consisting of agitating the molten soap with air. If carried out effectively, the weight of the finished product can be reduced by about 10 per cent. Waste cuttings are sometimes utilized, but many manufacturers prefer to boil the soap specially for this purpose. If the soap is newly boiled, care should be taken to ensure that the stock has a low moisture content.

The stock used is preferably white and made from a good quality of edible tallow with about 25 per cent of coconut oil. Tallow lathers rather slowly, but the lather is both firm and stable. Addition of coconut oil, of course, speeds up lathering besides improving the keeping qualities and appearance of the soap. Difficulty of lathering is a disadvantage of floating soap. The aerated state means that a relatively large surface is exposed to the action of the water, so that unless it is fairly hard and well dried out, it will dissolve too quickly. This large surface makes floating soap more susceptible to oxidation and rancidity development than ordinary soaps, so that special care must be taken to have it thoroughly saponified. The coconut oil and tallow should be saponified separately, using an excess of lye, which is finally removed by graining out with brine.

Numerous mechanical devices have been utilized to incorporate air into the melted soaps. One method is by means of an Archimedian screw operating in the reverse of the usual direction, so that air is driven into the soap. Another efficient method is to use a series of paddles rotating in opposite directions on horizontal shafts with the blades not completely immersed. The level of the soap should be adjusted so that maximum agitation is produced. A good procedure is to have the blades dipping only lightly into the melted stock at first, until a voluminous froth is formed, when more soap is added. The first froth then mixes with the rest and a homogeneous and well-aerated molten soap liquor is obtained.

The stock must be made fairly hard and is therefore run into a steam-jacketed crutcher at a temperature of 170-180° F., and the agitation carried on. As mixing proceeds, the soap becomes less clear in appearance, and finally quite opaque, while the volume increases until it is twice as great as it was originally. This volume change must, of course, be considered at the start. Cuttings from previous batches can be worked in during agitation. After 15 to 20 minutes, crutching may be stopped. The soap will have cooled down to about 130° F. The process is slowed down considerably if too much water is present.

The soap is tested periodically by taking a sample and seeing whether it has become opaque. The "feel" should be neither too greasy nor too slippery. The floating properties of a sample should be examined from time to time. An experienced workman is able to judge when aeration is complete by watching the soap at the edges of the crutcher, noting its tendency to solidify.

The soap should not be run into frames at too high a temperature, as it will then be too fluid to retain its air content. A part of the air would escape, leaving the soap at the bottom denser than that at the top. It should be cooled quickly, as it tends to sink in the middle while in a liquid state in the frames, leaving a high

proportion of scrap around the edges, which needs to be worked up again. For this reason, the soap is often pressed into the soft soap below, but in spite of this the proportion of scrap in all floating soaps may be rather high, and is sometimes as much as one-third of the total output.

In drying, the soap should be allowed to stand in the frames as long as is practicable. It should be dried in a cool room, as it tends to crack if exposed to any degree of heat. The block is cut into bars, which are again dried in a well ventilated room before being finally cut and pressed.

A good floating soap is made as follows: Introduce 135 kg. of tallow and 15 kg. of coconut oil into a sufficiently large steam-jacketed pan, and saponify with a mixture of 3 parts of soda-lye and 1 part of potash of 9-12° Be. at a gentle heat. Boil gently for two hours, when saponification is complete, salt out with 7 to 8 per cent of salt added in the form of a solution of 3 to 4° Be., keeping the soap boiling briskly. Continue boiling for another hour, shut off the steam, and aerate as described above. The soap must not be too strongly salted out, but if this has been done, add more water until the lye just begins to form a paste. The soap is ready for framing on cooling.

One of the defects of such a soap is that it does not lather well. The use of a higher proportion of coconut oil increases this property, as in the following formula:

Coconut oil	25 kg.
Tallow	12.5 kg.
Caustic soda lye (36° Be.)	20 kg.
Potassium carbonate solution (20° Be.)	20 kg.
Potassium chloride solution (20° Be.)	10 kg.
Brine (20° Be.)	12.5 kg.

Heat the whole fat mixture to 90° F. and stir in the caustic lye. After this has stood 1 to 1½ hours, the rest of the ingredients are crutched in boiling hot to salt out the soap. Proceed with the aeration at about 195° F. and frame as usual. Some soapers make floating soaps from coconut oil alone but such soaps have serious disadvantages and cannot be recommended.

Floating soaps can be readily made from cuttings. The best type of cutting for this purpose is tallow soap containing 25 to 30 per cent of cocoanut oil. Place 100 kg. of cuttings, which should be white or light in color, in a jacketed pan and add 15 kg. of potassium chloride solution of not more than 20° Be., together with 60-80 kg. of water, depending on the dryness of the cuttings. Steam is admitted and the cuttings dissolved. Difficulty encountered in dissolving very old or dry cuttings may be overcome by the addition of 1.5 to 2 kg. of salt to the pan, sprinkling it gradually on to the surface of the melt, and stirring thoroughly, with good heat. Too much salt should be avoided as this will affect the smooth surface of the finished tablet, as will also the presence of filling in the original cuttings, the worst offenders in this respect being silicate or soda fillings. Aerated soaps, because of their structure, are more susceptible to roughness than other soaps.

By incorporating certain materials with ordinary soap, the density may be reduced sufficiently to enable it to float on water. The substances most frequently used are light hydrocarbons such as paraffin wax, wool fat, and various waxes. The amount of wax to be used is easily determined by knowing its density and that of the soap with which it is to be admixed. In this way the specific gravity of the final product may be calculated in advance and adjusted to any pre-determined figure. The properties of the wax remain unaltered after addition to the soap, so that if too much wax is used, the soap will be deficient in lathering power.

The best soap bases to use are those containing a high proportion of fatty acids of high molecular weight, such as coconut or palm oil. The use of a certain proportion of cottonseed oil is advocated in some quarters as aiding the formation of a good emulsion, and lending smoothness to the finished soap.

The most popular color for a bath soap is undoubtedly white, but in some cases it may be colored, usually rose or red. Colors which may be used are cardinal red, brilliant rose, tampica orange, or various aniline colors. Perfuming should be carried out carefully and should not be too heavy. Perfume and color are added to the soap while it is in the pan before it begins to form a thick froth. For white soaps, the most useful perfumes are citronella oil, lavender oil or thyme oil, while for colored soaps palmarosa oil, cassia oil, bergamot oil or geranium oil are recommended.

The nigre of floating soaps cannot be utilized in a second batch without spoiling the color, but it is unusually rich in glycerine.

Soap made from pale wood rosin has a bright yellow color, whereas soap made from pale gum rosin has a greyish yellow color, although in comparing pale wood and gum rosins, the original color, grade for grade, is approximately the same. The melting points of wood rosins are slightly lower than those of the corresponding gum rosins. The acid number is about the same in each, indicating the same percentage of free resin acids, but in general this consists of more abietic acid in wood rosin than in gum. The saponification number of wood rosin is very slightly lower than the same grade of gum rosin, the difference being too small to be of importance to the soap manufacturer. The unsaponifiable content on the average is the same. Wood rosins contain less oxidized resin acids than do gum rosins. Wood rosins contain less dirt and foreign matter. Variation in chemical constants is less with wood rosins, and therefore they run more uniform than gum rosins. G. F. Hogg. *Oil and Soap* **12**, 44-7 (1935).

Household soaps are obtained rapidly in a single operation by using a starting alkaline salt lye and by maintaining during the whole operation a biphase system near to the monophase system which allows a rapid combination of the soda with the fats. Antione C. Gillet. French Patent No. 772,028.

Estimation of Fatty Alcohol Sulfates

FATTY alcohol sulfates react with 1-amino-5-ethoxybenzothiazole to form salts insoluble in water. This is used for a rough quantitative estimation of small amounts of this type of product by comparing the turbidity produced with the reagent, against that of standards similarly treated. Ten parts per million can be detected in clear solutions. Soaps and the following ions do not interfere: Ammonium, sodium, potassium, calcium, barium, magnesium, zinc, aluminum and iron; carbonate, silicate, borate, phosphate, sulfate, sulfite, chloride, nitrate and acetate. Other sulfated and sulfonated textile assistants such as Turkey-red oil, Alkanol B and Neomerpin SA, also form precipitates with the reagent. These therefore can not be distinguished from the fatty alcohol sulfates.

A method for determining fatty alcohol sulfates specifically is as follows: Dissolve a 10 gram sample of the dry product, or an equivalent quantity in another form, in 200 cc. of water, add 100 cc. of concentrated hydrochloric acid and reflux for 3 hours. After hydrolysis, extract the resulting alcohols with ether and determine gravimetrically. Determine the hydroxyl number by any standard procedure. Hydroxy fatty acids interfere, but they can be easily distinguished from alcohols.

The procedure which follows is for approximate determination of the amount of fatty alcohol sulfate present in a bath which may vary in concentration from 0.01 to 0.3 per cent. The application of the method is for a bath which is to be maintained between two limiting concentrations. The sample should preferably be at a concentration of 0.01-0.1 per cent. An error of 15 per cent may be involved, but this may be sufficiently accurate for practical work.

Turbidimetric Reagent:—A saturated aqueous solution of purified 1-amino-5-ethoxybenzothiazole hydrochloride is used. Dissolve the crude product in hot water, stir with a clarifying char and filter. Precipitate the free base with ammonium hydroxide, filter and wash with water. Dissolve the precipitate in dilute hydrochloric acid, precipitate the hydrochloride by adding concentrated hydrochloric acid and chilling in ice water. Filter and dry in a vacuum oven at 60°C.

Sample Solution:—Dilute to a concentration of 0.01 to 0.1 per cent. The other ingredients present in the sample should be known, so that the standards can be made up to resemble the sample as nearly as possible.

Procedure:—Filter 100 cc. of sample solution into a clean glass container similar in size and shape to those in which the standards are kept. Make just acid to Congo red paper with concentrated hydrochloric acid and place in a shallow pan in cold running water. If the liquid becomes cloudy, filter again. When the temperature of the filtrate is constant, add 3 cc. of reagent, shake and return to the pan. After 5 minutes, compare the turbidity developed with that of standards cooled to the same temperature.

Apparent turbidity depends on the conditions under which the particles are formed. It is necessary that the standards be prepared by adding known quantities of an individual fatty alcohol sulfate to portions of the solution formula in use in the bath. Prepare a series of 0.01, 0.02, 0.04, 0.06, 0.08, and 0.1 per cent concentration. Fresh standards must be prepared at frequent intervals, as particle size changes on ageing. C. J. Pedersen. *Am. Dyestuff Reporter* **24,** 137-8 (1935).

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DETERMINATION OF TRIETHANOLAMINE

A method for determining triethanolamine in shaving creams and emulsions is based on its reaction with hydriodic acid to form a white crystalline substance. The latter has the composition $(CH_2OHCH_2)_3N.HI$ and contains 53.6 per cent of triethanolamine. Saponify the sample and evaporate to dryness with lime. Extract the powdered residue with boiling absolute alcohol. Evaporate off the alcohol. Accurately weigh about 0.5 gram of the residue and evaporate to dryness with 0.5 cc. of constant-boiling 57 per cent hydriodic acid and 5 cc. of water. Stir up the residue with 5 cc. of pure iso-propyl alcohol, transfer to a weighed Gooch crucible and wash three times with 5 cc. portions of the alcohol. Dry to constant weight. Use a correction of 1 mg. for each cc. of iso-propyl alcohol used for transfer and washing. Multiply the weight by 0.536 to get the weight of triethanolamine. The compound obtained melts at 169° C. H. Ronald Fleck. *Analyst* **60,** 77-9 (1935).

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A new method of saponification has been suggested as being more economical than the usual methods used in soap manufacture. It is called adsorptive saponification. No special equipment is needed. The crude fats are introduced into the boiling vat and heated. The saponifying agent, which may be soda ash, is introduced in powdered form instead of in solution. The process is continued the same as for caustic soda solution. The soap is tested by the usual methods and the necessary "doctoring" carried out. The degree of heating is somewhat less than in the usual procedure. The time required for saponification is about the same. G. Faludy. *Seifensieder-Ztg.* **61,** 831-2 (1934).

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In continuously extracting fat from animal and vegetable materials, the pulped raw material is heated in a thin layer under pressure and the compressed pulp is then subjected to a sudden reduction in pressure. This causes the fat cells to burst. Aage Nyrop. British Patent No. 418,107.

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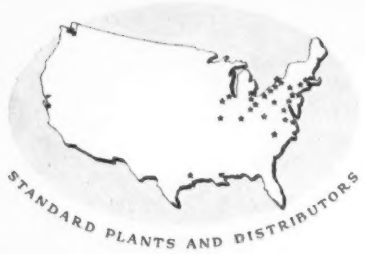

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BOUND WATER IN SOAP CURD

The presence of bound water in dried fibers of soap curd was demonstrated by the dew-point method at room temperature. When formed in the presence of a saturated solution of sodium oxalate, sodium palmitate fibers contain 2.6 molecules of water per molecule of soap. It is possible that there are definite hydrates of sodium palmitate, including one with 8 water and possible two with 2.6 water and 30 water, although these results may be partially overlaid by absorbed water. Curd fibers obtained from liquid-crystal anisotropic solutions contain half as much water as those from ordinary isotropic solutions. The behavior of soap curd is due to crystalline, though often ultramicroscopic fibers, and is wholly different from that of any gels or jellies. J. W. McBain, H. I. Bull and L. S. Staddon. *J. Phys. Chem.* **38**, 1075-84 (1934).

SEPARATION OF FATTY ACIDS

A discussion of the separation of solid from liquid fatty acids was presented recently by R. Strauss in *Chemiker-Zeitung*. Not all fatty acid mixtures are amenable to the usual method of separation, that is, cold and hot pressing. Alternative processes have been proposed. The idea of dissolving the fatty acids, and then crystallizing out the stearin, has been discussed for some years, but such processes involve considerable difficulties. For example, if benzine is used as solvent, the product obtained on cooling is a paste from which the olein cannot be separated. If alcohol is used as solvent, this difficulty is overcome but a new one is encountered, namely that the alcohol may esterify the fatty acids, particularly if the temperature is raised.

If hydrocarbons boiling between 150 and 175° C., such as heavy benzine, are employed as solvent, the stearin separates almost quantitatively, provided crystallization is effected in the presence of a finely divided insoluble body, or in the presence of a compound soluble in the fatty acids but insoluble or difficultly soluble in the hydrocarbon. Substances proposed for use in this way are inorganic compounds such as silicates and borates, and organic compounds such as tartrates. To be effective, such a substance must be added in the finest possible state of division, and maintained in this state during the process. Examples of the other class of product are salts of aliphatic and aromatic acids, such as sodium stearate. Their quantity should be about 5 per cent of the weight of the solution. These substances provide nuclei around which the stearin can crystallize. The latter separates completely, on cooling the mixture to 10° C. The stearin is separated from the insoluble foreign substance added, by hot filtration. By repeating the crystallization process, stearin melting at 60-61° C. can be obtained.

Another procedure depends on the addition of the oxide or hydroxide of a heavy metal or alkaline-earth metal, together with the hydroxide of an alkaline metal, to the fatty acid mixture dissolved in alcohol. Insoluble soaps of the heavy metals and soluble soaps of the alkali metals are formed simultaneously. The solid fatty acids are precipitated as insoluble soaps, while the liquid fatty acids form the soluble alkali soaps. The composition of the alkaline mixture to be used depends on the proportion of solid and liquid components in the mixture. The two types of alkaline agents should be added at the same time.

Separation can also be accomplished by changing all of the fatty acids to soluble soaps and then adding the necessary amount of precipitating agents to form insoluble soaps with the solid fatty acids. Or all of the fatty acids can be changed into insoluble soaps, and the liquid fatty acids liberated by the addition of the calculated quantity of mineral acid.

NEW CONCEPTION OF FAT COMPOSITION

A somewhat detailed and excellent discussion of our present knowledge of the fats was given by Professor T. P. Hilditch in the Jubilee Memorial Lecture and reported in *Chemistry and Industry* **54**, 139-45, 163-7, 184-9 (1935). The old conception that fats were mixtures of triglycerides such as tristearin and triolein has been discarded. Natural fats are very apt to be mixed, not simple triglycerides,—that is, any individual triglyceride molecule tends towards maximum heterogeneity in its composition. For example although olive oil contains about 75 per cent of oleic and 8 per cent of linoleic acids, about 60 per cent is in the form of mixed oleolinoleic glycerides. Palm oils contain almost 90 per cent of mixed dipalmito-"oleins" and palmitodi-"oleins".

There is no apparent connection between fruit-coat and seed-fats from the same plant. They may be very similar but much more frequently they are quite different. Thus a hard, relatively saturated fruit-coat fat like that in Chinese tallow may accompany a highly unsaturated liquid seed-fat, or the converse may happen. Besides the discussion of fruit fats, fats from aquatic flora and fauna, as well as fats from land animals, are included. Under the catalytic hydrogenation of fats, the production of fatty alcohols by means of high-pressure hydrogenation and the use of selective catalysts, is mentioned.

DEFENDS USE OF STRONG LYE

By the use of a strong lye in soap kettle practice, a materially better saponification is effected than by the use of weak lye, according to a statement by Julius Schaal, German soap expert, who is now in the United States consulting with American soap makers. The use of various washes in the saponification process does not produce a better or more lasting soap, he states, and furthermore it results in the incorporation of large quantities of water which must be later removed from the soap mass in the dryer. Besides this expense, which he holds is unnecessary in soap making, the presence of salt in the finished soap actually interferes with lathering properties. The glycerine which remains in the soap when strong lyes are used and the soap is not salted out, not only improves the properties of the lather, but gives the soap fibre a better consistency.

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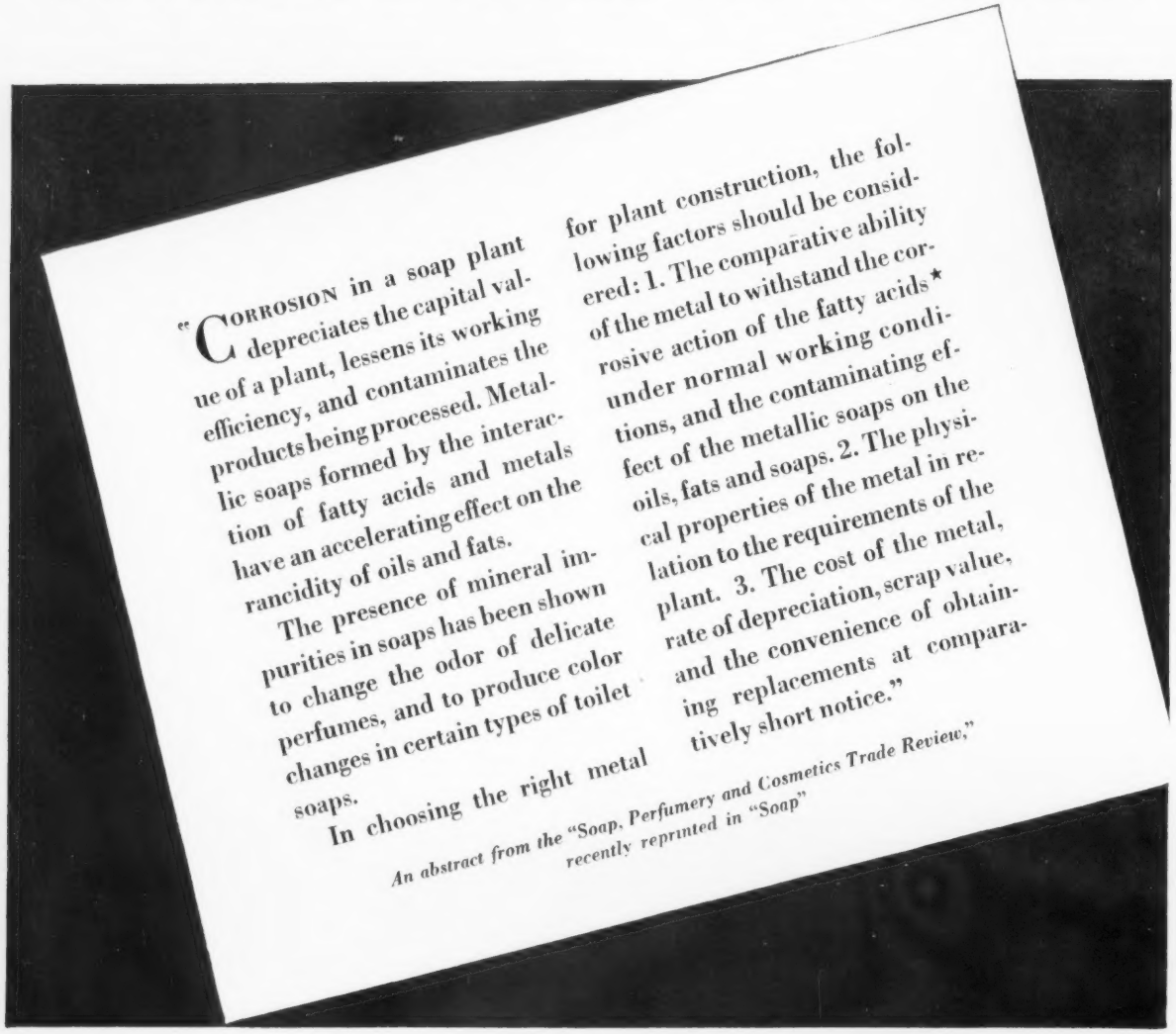

"CORROSION in a soap plant depreciates the capital value of a plant, lessens its working efficiency, and contaminates the products being processed. Metallic soaps formed by the interaction of fatty acids and metals have an accelerating effect on the rancidity of oils and fats.

The presence of mineral impurities in soaps has been shown to change the odor of delicate perfumes, and to produce color changes in certain types of toilet soaps.

In choosing the right metal for plant construction, the following factors should be considered: 1. The comparative ability of the metal to withstand the corrosive action of the fatty acids* under normal working conditions, and the contaminating effect of the metallic soaps on the oils, fats and soaps. 2. The physical properties of the metal in relation to the requirements of the plant. 3. The cost of the metal, rate of depreciation, scrap value, and the convenience of obtaining replacements at comparatively short notice."

An abstract from the "Soap, Perfumery and Cosmetics Trade Review," recently reprinted in "Soap"

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ON PRODUCTS AND PROCESSES

Soaps of fatty acids, mucins, lecithins, bitter principles and like impurities are separated from animal or vegetable oils or fats by a concentrated alcoholic solution of an alkali sulfate, chloride, nitrate, formate or acetate. Metallgesellschaft A.-G. French Patent No. 772,452.

◆

A liquid soapless shampoo is made from a derivative of lauryl sulfate. The liquid form of this product, the triethanolamine salt, is used, rather than the powdered form, which is the sodium salt. To make the shampoo, prepare a 10 per cent solution of the liquid form in water. It can be perfumed with a water-soluble perfume. The pH can be adjusted to the slightly acid side to give the best results as regards gloss and general appearance of the hair. This is done in Europe by adding a few per cent of lactic acid calculated on the original liquid. This brings the pH down around 6. *Manufacturing Chemist* **6**, 68-9 (1935).

◆

Higher fatty acids are distilled from material containing them by passing the material through a confined passage in a heating zone. This brings the fatty acids to volatilization temperature. The material is discharged into a chamber of reduced pressure, and the volatilized acids withdrawn from this chamber. New Process Fat Refining Corp. French Patent No. 773,635.

◆

When fats, particularly those containing glycerides of the unsaturated fatty acids develop rancidity, it is mainly the result of atmospheric oxidation and has been shown repeatedly to be autocatalytic in nature. Known inhibitors of this reaction are maleic acid, hydroquinone, pyrocatechol, diphenylguanidine, and other substituted secondary amines. Vegetable lecithin as produced by the Bollman extraction method from soy beans, has been found to be an efficient antioxidant. This property is easily destroyed by heating the vegetable lecithin above 65° C. Therefore it should not be used as an antioxidant until the oils have been cooled to at least 50° C. Everette I. Evans. *Ind. and Eng. Chem.* **27**, 329-31 (1935).

◆

Superfatted soaps, creams, polishes, etc., are made by adding to such compositions at any point in their manufacture, aliphatic or hydroaromatic compounds of high molecular weight, containing free or substituted hydroxyaryl groups. An example is decyl-phenol, or -cresol. Henkel & Cie. G.m.b.H. French Patent No. 773,246.

◆

Raw fatty oils are refined by injecting an aqueous solution of a refining agent such as caustic soda, or soda ash into a flowing stream of the oil so as to disperse the agent uniformly in the oil as fine drops. The mixture is kept flowing until the impurities in the oil are neutralized or rendered capable of subsequent removal. The flowing oil and foots are subjected to mild turbulence for a period sufficient to produce agglomeration of the foots. Separation of foots and oil is brought about by centrifugal treatment. Benjamin Clayton. British Patent No. 417,996.

◆

A powdered rosin soap was obtained from a viscous mass containing about 50 per cent of water by atomizing this mass in a drying chamber. The product was of a high commercial quality and did not absorb moisture from the air. It contained 3 per cent of water, 32 of rosin, 1.23 of ether-insoluble substances, 12.08 of total alkali and 0.4 per cent of salt. D. N. Smirnov, S. Y. Koruitov and A. S. Nemkin. *Lesokhimicheskaya Prom.* **3**, No. 1-2, 24-6 (1934).

◆

The "spoilage number" of fats and oils is an iodometric determination of the oxygen addition products present. It is expressed numerically as the number of milligrams of potassium iodide decomposed by 10 grams of fat. It is independent of the degree of rancidity and estimates the start in those changes which eventually result in spoilage. The "spoilage number" for fresh, edible fats appears to be less than 5. When the number exceeds 15, the fat is to be considered spoiled. The way in which the fat has been treated has something to do with the size of this number, for a fresh lard, if overheated, may have a number as high as 10. Caution is necessary in applying this method, but it gives a new view of the changes in the condition of fats on storage. J. Gangl and W. Rumpel. *Z. Untersuch. Lebensm.* **68**, 533-9 (1934).

◆

Olive oil from Palestine had a saponification value of 191, an iodine value of 82.6, and 1.12 per cent of unsaponifiable matter. The iodine value of the unsaponifiable matter was 255. By treatment of the unsaponifiable matter with hot methyl alcohol and filtering, a solution was obtained which was used for fractional crystallization. The material insoluble in methyl alcohol was a heavy colorless oil with an iodine value of 342 and contained, surprisingly, a considerable quantity of a hydrocarbon resembling squalene. The hydrocarbon appears to be present in all samples of olive oil. Attempts to base the identification of olive oil on its detection were not satisfactory. T. Thorbjarnarson and J. C. Drummond. *Analyst* **60**, 23-9 (1935).

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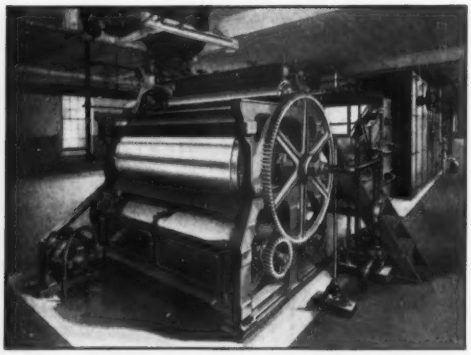

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Information on the glyceride structure of palm oils has been obtained from study of the partly hydrogenated and the completely hydrogenated fats from two oils representing extremes in fatty acid composition; a Cape Palmas oil with 1.6 per cent of myristic acid, 32.3 per cent of palmitic, 5.5 of stearic, 52.4 of oleic, and 8.2 per cent of linoleic acid,—and a Belgian Congo plantation oil with 1.3 per cent of myristic acid, 41.4 of palmitic, 4.7 of stearic, 42.9 of oleic and 9.7 per cent of linoleic acid.

The Cape Palmas oil contained approximately 2 per cent of tripalmitin, 1.5 per cent of diphalmitostearin, 16.5 per cent of dipalmito"oleins," 66 per cent of monopalmitodi"oleins" and 14 per cent of tri"olein" or stearodi"oleins." The term "oleins" as used here implies that either olea-and/or linoleoglycerides are concerned. The Belgian Congo oil contained approximately 5.5 per cent of tripalmitin, 1 per cent of dipalmitostearin, 29.5 per cent of dipalmito"oleins", 58 per cent of monopalmitodi"oleins," and 6 per cent of tri"olein" or stearodi"oleins." A. Banks, H. K. Dean and T. P. Hilditch. *J. Soc. Chem. Ind.* **54,** 77-82T (1935).

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Treatment of sulfur olive oils containing oxidized acids is based on the solubility of the sodium salts of the oxidized acids in salt solution. With oils of various origins not over 3 per cent of oxidized acids was found. Old oils or oils freshly prepared from long-preserved olive seeds showed contents of oxidized acids as high as 22 per cent. The neutralization number of these acids usually lies between 150 and 165, reaching 180 in some cases. Sulfur oils with increased amounts of oxidized acids have lessened technical value, but can be used in mixtures with fresh oils with proper regulation of the saponifying mixture. The acetyl number of Greek sulfur oils lies between 20.1 and 36.0, the fresher giving an average of 28.9 and the older 32.0. M. N. Zaganiaris. *Praktika* (Akad. Athenon) 8, 389-94.

—— ♦ ——

When pilchard oil was hydrogenated in the presence of a nickel catalyst on kieselguhr, the iodine value decreased. The tetrabromides decreased rapidly during the first stage of the reaction and disappeared somewhere between an iodine value of 120 and 60. There was practically no increase in the percentage of fatty acids until the iodine value fell to 120 or lower. The reaction is highly selective. Over the interval between an iodine value of 120 and 60, the last traces of fatty acids containing 3 or more double bonds disappeared, as well as practically all of those containing double bonds. The average number of double bonds of the unsaturated acids in pilchard oil is roughly 2.8. Approximately two-thirds of the total fall in iodine value corresponds to the hydrogen needed to convert the resulting fatty acids having only 1 double bond into fully saturated acids. F. Charbley. Progress Repts., Pacific Biol. Sta. Nanaimo, B. C. and Fisheries Exptl. Sta. Prince Rupert, B. C. No. **19,** 7-10 (1934).

OLIVE OIL FOOTS

(*From Page* 24)

of sulfur oil are saponified with alcoholic potash, the alcohol evaporated off, the soap residue dissolved in water, transferred by washing to a separatory funnel, and decomposed with dilute hydrochloric acid to separate the fatty acids. This method converts into fatty acids all of the fatty matter,—the neutral oil as well as the oil combined as metallic soaps. The liquid is allowed to cool. The one hundred cc. of cold petrolic ether is added and the whole shaken vigorously for a few minutes. It is allowed to settle, the water layer drawn off, the petrolic ether layer poured from the top through a filter paper and the oxidized acids adhering to the walls of the separatory funnel washed repeatedly with portions of the solvent and filtered through the same filter. After complete washing to remove unoxidized matter, the residue of oxidized fat in the filter and in the separatory funnel is dissolved in warm alcohol or a mixture of alcohol and ethyl ether and transferred by filtration to a separate tared beaker. Thus, both oxidized and unoxidized fatty acids may be determined on the same sample by the one method.

The unoxidized acids may be analyzed for the usual constants. They should agree reasonably close with those of pure olive oil. The oxidized acids need no further examination other than a possible saponification value, as the iodine value is of little consequence, since it is greatly reduced.

In cases of very old foots, linoxylins are also formed. These are practically insoluble in either alcohol or ethyl ether or both, and thus not included in the oxidized acids portion found above. These may be dissolved from the residue with ethyl or iso-propyl acetate and determined separately. These acids, in particular, produce water insoluble soaps which give rise to excessive trouble in the soap kettle.

TABLE III. Petrolic Ether Insolubles and the "Oxidized" Acids

Sample No. and Quality	*Free Fatty Acids on Original samples* %	*Petrolic Ether Insolubles* %	*% F.F.A. on P.E. Insolubles* %	*Oxidized Acids* %
10. Choice	88.10	1.88	32.10	4.20
11. Choice	55.10	2.00	30.20	5.80
12. Choice	45.03	2.83	28.90	6.50
13. Late season	58.06	5.50	36.08	8.48
14. Late season	61.60	6.17	32.70	7.25
15. Late season	54.61	6.59	33.20	9.88
16. Old	62.87	9.18	35.23	14.02

Several very interesting facts are to be gleaned from the above table. First, for normal foots, i. e., where the metallic soap content is very low and there is not much resinous matter, the insolubles by cold petrolic ether are lower in amount than the oxidized acids. Secondly, the poor quality of foots is better reflected in the increasing amount of such insolubles than in the content of oxidized acids. The latter increase somewhat with age, it is true, but even in the choicer grades of sulfur oil there is an appreciable amount already present. It may be that freshly extracted foots would contain very little oxidized matter, but such foots rarely appear on the market since they are almost always

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refined at home to obtain neutral oil. The usual good foots on the market will usually contain at least three to five percent of oxidized acids, and those later in the season will have from eight to twelve per cent. It would, therefore, seem that oxidized acids are an inevitable ingredient of foots as they are actually sold. Sufficient oxidation in foots ensues even under the best conditions to render this test inadvisable for regulatory purposes, except possibly to designate as a maximum a figure such as ten or twelve which would include the foots produced at the tail end of the season.

On the other hand, while even the best foots show an appreciable quantity of such oxidized acids, the content of insolubles by the petrolic ether method is and should be low for all normal foots. Therefore, this test will reveal abnormal impurities, such as the orthodox analysis would never show, i.e., iron and lime soaps, gummy and resinous matter, and so forth of little or no use to the soap-maker. Some of these compounds, like the iron soaps, when broken down, give an increase in oxidized fatty matter which is reflected in the test for such. In this sense, both tests are correlative. However, Lauro[4] pointed out the failure of the ethyl ether solvent to reveal as much as thirty per cent of lime soaps in foots, and it is doubtful whether the test for oxidized acids would show this. Lime, unlike iron, will not act as a catalyst in the oxidation of fatty matter. The cold insolubles would, however, positively disclose such an addition.

Another point brought out as a result of the experiments outlined in Table III. is the fact that the gasoline insolubles have an appreciable free fatty acidity. By inference these acids must be oxidized since they are insoluble in cold solvent. If so, this would negate a statement made by Trevithick[1] that the two groups,—the insolubles in cold petrolic ether and the oxidized acids as obtained by two separate tests, are two very different groups of fats. It would show, on the contrary, that the first group of substances contains in a measure some of the second grouping. The first group Trevithick characterizes as "oxy" acids or lactones to distinguish them from the oxidized acids. The writer has refrained religiously from the use of such a term as it is a source of considerable confusion. Lewkowitsch[5] states that due to slight solubility of lactones in carbon bisulfide the proportion found in sulfur oils is very small. It is the writer's experience that there are at the most only small amounts, so that "oxy" acids are not lactones, as asserted by Trevithick, but in reality a mixture of heterogeneous substances, grouped collectively under its proper designation as insolubles in cold petrolic ether.

To substantiate the fact that the two groups are not dissimilar, the writer determined the oxidized acids in several samples after removing the insolubles, and compared their amount with what was originally obtained before such removal. Table IV. shows the difference, and proves conclusively that part of the oxidized acids are included in the insolubles. This seems logical in view of the fact that the sulfur oil samples contain over fifty per cent free fatty acids to start with, and of necessity a portion of the same, being oxidized, must precipitate "as is" under the conditions of the test with cold solvent.

TABLE IV. Comparison of Oxidized Acids with Cold Petrolic Ether Insolubles Before and After Removal of the Latter

Sample No.	*Petrolic Ether Insolubles* %	*Oxidized Fatty Acids Originally Present* %	*Oxidized Fatty Acids Present After Removal of Insolubles* %
14. A.	6.19	7.25	4.83
B.	6.14	7.23	4.35
16.	9.18	14.02	3.56
13. A.	5.30	8.48	3.84
B.	5.69	8.48	3.36

Summary

1. Olive oil foots is a by-product of the olive oil industry. The New York Produce Exchange regulation embraces only the true sulfur olive oil or foots extracted with carbon bisulfide, whereas oils extracted by other solvents are properly sold on the market as olive oil foots.

2. At present there is no control over quality other than the customary "Moisture, Impurities and Soap Color", which can scarcely be said to achieve its purpose. Soap-makers demand a more reliable evaluation. The tests for oxidized acids and insolubles in cold petrolic ether are two measures for arriving at the soap-making quality of foots properly.

3. It is submitted that the determination of the cold petrolic ether insolubles is a surer means of disclosing poor or off quality as well as added impurities objectionable to the soap-maker than the determination of the oxidized acids alone.

Literature Cited:

[1] H. P. Trevithick—"Olive Oil Foots Oleine", *Oil and Soap*, Vol. X, No. 7, (1933).

[2] N. Y. Produce Exchange—Rules in Vegetable Oil, Waxes and Fats, Sec. 44, 45.

[3] Lewkowitsch—Chemical Technology of Oils, Fats and Waxes, 6th Ed. Vol. I, Page 593, (1923).

[4] M. F. Lauro—"Lime Soaps in Olive Oil Foots"—*Oil and Fat Industries*, 4, 75, (1927).

[5] Lewkowitsch—Chemical Technology of Oils, Fats and Waxes, 6th Ed. Vol. II, Page 354, (1923).

—— ♦ ——

Soap compositions are made by mixing soap, preferably liquefied, with one or more salts and extruding the mixture through a nozzle to form filaments of less than 1.5 mm. diameter. The filaments become brittle when dried, and can be broken up into small rods. Suitable salts are potash and the bicarbonates, sulfates, phosphates, silicates, borates, acetates, nitrates and aromatic sulfonates of sodium and potassium. The proportion of salt may be between 5 and 30 per cent, but must be below the proportion at which salting-out would occur. Adolf Welter. German Patent No. 606,366.

—— ♦ ——

Experimental results show the deleterious effect of iron compounds on the bleaching power of clay. For this reason, clay for use as a decolorizing agent for oils and fats is given special treatment to remove all iron. Norddeutsche chem. Fab. German Patent No. 606,346.

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Reg. U. S. Pat. Off.

The Importance of Stability

With the introduction of Deo-Base to the insecticide industry, L. Sonneborn Sons, Inc. pioneered the adoption of hydrocarbon distillates refined to complete freedom from kerosene odor. 1935 will undoubtedly see the almost universal use of insecticides free from objectionable odor.

In addition to its odorless characteristics, Deo-Base possesses another equally important property. *It automatically maintains its own stability and prolongs the effectiveness of the toxic principles employed in the manufacture of liquid insecticides.*

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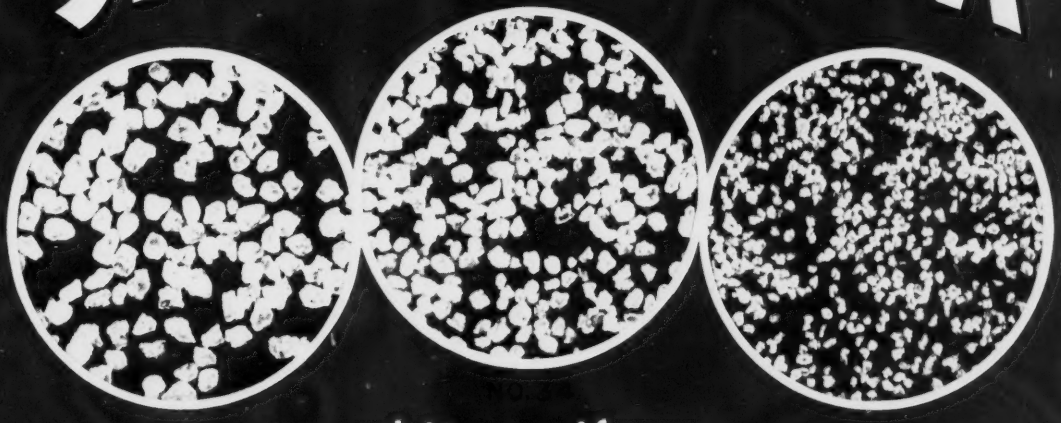

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Manufactured by the same dependable process as our regular extracts. Let us send you samples.

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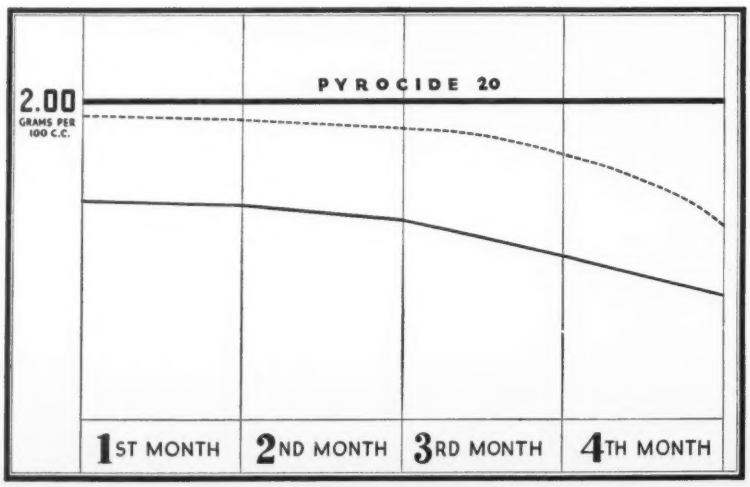
• THE 95 DEGREE TEST

THE availability of a method* for assaying known kerosene solutions of pyrethrum for pyrethrin strength has introduced new and interesting questions.

One that is always pressing for an answer is—how well does the concentrate that you are using retain strength? The answer will be vital to you. It is not enough to know simply that the solvent is kerosene. It is not enough to know that it contains "antioxidant" for some antioxidants cease to be effective in preventing oxidation losses after a short time. There is an answer to this question. It is simply—USE PYROCIDE 20. It retains its full strength even under abnormal conditions.

*Seil, H. A., Soap 10, No. 5, 89, 1934.



This is not a specific graph. It pictures what has actually happened with some concentrates examined in our laboratories. The dotted line represents what may happen to a concentrate protected with an antioxidant.

UNIFORM KILLING POWER

RETAINS FULL STRENGTH
PROVES THIS CONCLUSIVELY

How do we know this? Because we submitted Pyrocide 20 to this severe test:

Samples of Pyrocide 20, taken from a 20,000 gallon stock tank and placed in tin containers, were stored in an incubator at 35° C. (95° F.) for four months. There was no loss in pyrethrin content. Samples as old as three years, stored before the assay method above mentioned was available, still complied with our guarantee of 2.0 grams pyrethrins per 100 cc. (equivalent to 2.4%).

Frankly, we were surprised, in the light of information which our technical department has recently discovered, that samples stored at 95° F. retained full strength. Think of those hot, still, enervating days of July and August when the temperature ranges around the 100° mark! You might naturally expect that a solution of pyrethrum in kerosene *at that temperature for four months* might be changed chemically. Our laboratory found that some concentrated extracts of pyrethrum will not stand this "acid test", but lose pyrethrins.

* * *

If you use Pyrocide 20 exclusively in your insecticides, you can forget all about loss of strength. In the opinion of many buyers, Pyrocide 20 is more likely to produce the full killing strength that you require in your insecticides, and to do it more *economically,* than any other concentrate.

Pyrocide 20 is shipped in steel drums containing 15, 30 and 53 gallons from warehouse stocks in New York, Los Angeles, Minneapolis, and several foreign cities. We also can supply pyrethrum flowers of known pyrethrin content in whole, ground or powdered form.

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STANDARDIZED EXTRACT OF PYRETHRUM FLOWERS

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this year by selling your consuming trade these three standard, tested products . . . . . .

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PES-TOX HOUSEHOLD SPRAY

Effectiveness and odor-appeal are the two important characteristics of an insecticide, and PES-TOX has both. The strength of each lot is carefully controlled, subject to the Peet-Grady Test, and surpasses the standard of the National Association of Insecticide and Disinfectant Manufacturers. Supplied in bulk for distributors.

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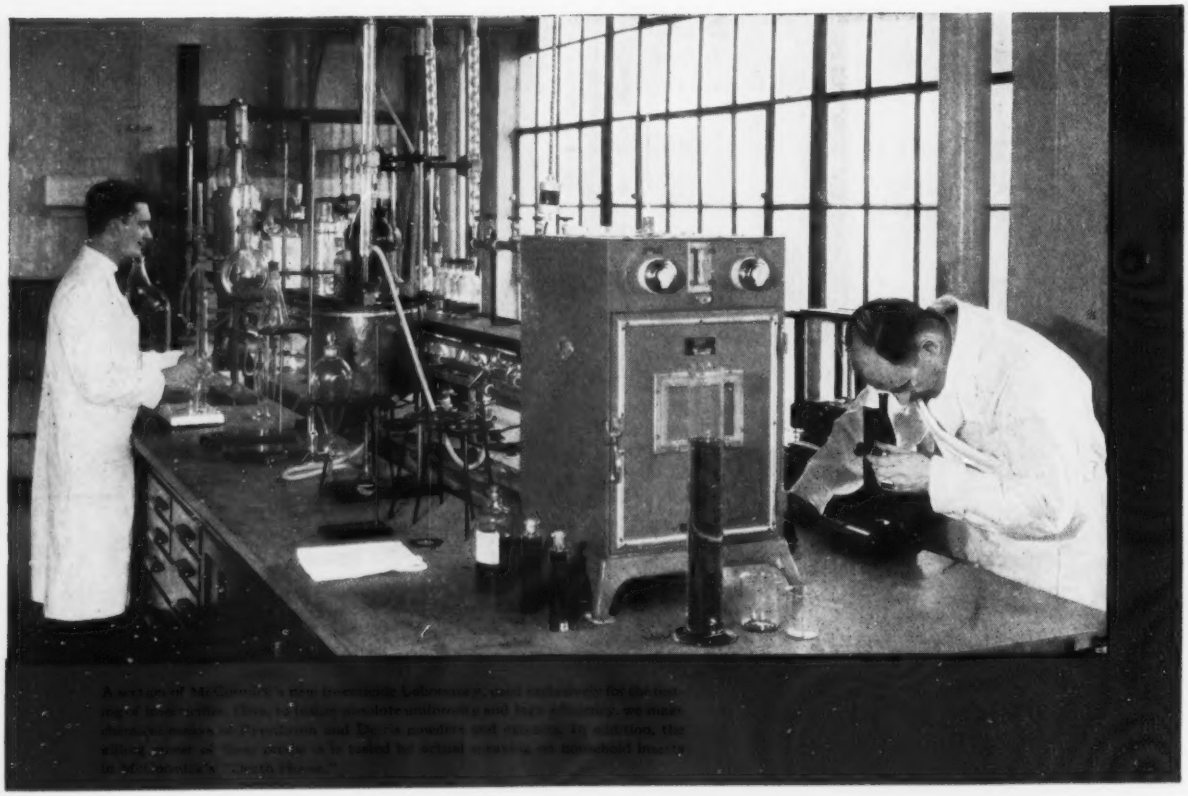

PYRETHRUM AND DERRIS POWDERS

Other McCormick Standardized Pyrethrum and Derris Products

PYRETHROL 20: A uniform, standardized pyrethrum concentrate, the necessary amount of high-test pyrethrum flowers being used in processing each gallon of extract. The quality of the ingredients entering into Pyrethrol 20 is determined at all times by chemical assay. Then double checked by actual spraying on household insects. Only by this constant exacting effort are we able to produce an always uniform concentrate of the desired high killing power.

DERRIS EXTRACT: Containing 5.0 grams of rotenone per 100 c. c. plus the other toxic derivatives of derris root.

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Ground extremely fine; specially treated to prolong efficiency after exposure to light and air

PYRETHRUM POWDER: Finest available, with a known high pyrethrin content. Milled with modern equipment which makes heat accumulation impossible. Ground extremely fine—contains more killing particles—remains suspended in the air longer. More effective and economical because it comes into more intimate contact with vital parts of insect's body.

DERRIS POWDER: Finest powder in the world. Standardized at 4% rotenone. Suitable for use in aqueous sprays. Will not clog spray nozzles.

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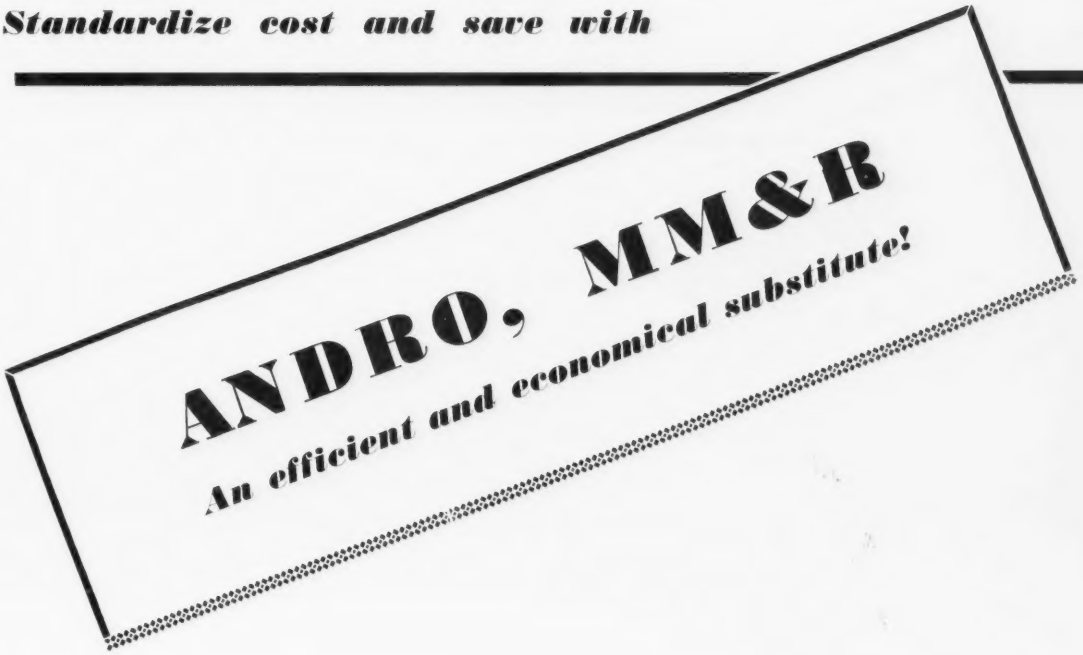
Oil Citronella is higher~

Standardize cost and save with



With oil citronella much higher in price and with little or no stability to the market, the wisdom of standardizing on an efficient substitute is quite apparent. In Andro, MM&R we offer an excellent product to accomplish this purpose. It is low in cost and, of even greater importance, the price does not fluctuate. This new and excellent product presents the characters midway between Oil Citronella Ceylon and the Java variety. It is equal in pungency to the best citronella oil, light in color, uniform in quality and strength, almost water white and without the tendency to darken in your finished soaps, sprays or other products.

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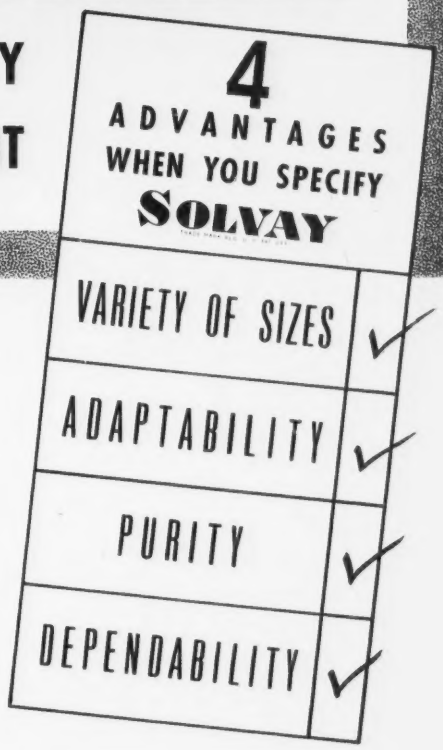

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1. **VARIETY OF CRYSTAL SIZES** to meet every requirement of the trade.
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4. **DEPENDABILITY** of Solvay Para-Dichlorobenzene in gradation of sizes and in action is assurance that *your* product, too, will be of uniform quality.

Immediate deliveries made from stockpoints throughout the country. Write today for samples and prices.

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Alkalies and Chemical Products Manufactured by The Solvay Process Company

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LETHANE 384 insecticides are outstanding not alone for their effectiveness against flies. As moth sprays for household use they are unexcelled. LETHANE 384 kills moths, eggs and larvae. The invisible, non-staining residue which is left impregnated in sprayed fabric maintains a repellent effect over a reasonable period of time.

LETHANE 384 sprays give spectacular results against bedbugs. Instantaneous kills are obtained, and there are not the objectionable and suggestive after-odors that attend the use of the common bedbug sprays.

Prepare for an early Spring selling season by using LETHANE 384 in your insecticide.

DON'T LIMIT YOUR MARKET!

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KEROSENE or other insecticide odor is especially unpleasant to the woman of fastidious tastes, who dislikes having her home, person and furnishings "smelled up."

A pleasantly perfumed spray is easy to sell—and fly spray manufacturers who are using Felton covering products have found this out—to their own and their dealers' profit!

Try Felton's economical neutralizing and perfuming agents.

They offer you maximum coverage, minimum cost, and the prospect of definite sale increase!

VITAFLOR No. 758 — **Powerful Neutralizer**

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GERMICIDAL TEST

F. D. A. (Food & Drug Administration) Method

Organism—B. typhosus (Hopkins).
Age of culture—24 hours at 37 Degrees C.
Medium—Standard beef extract broth (pH 6.8).
Peptone—Armours Special.
Organic matter—none.
Temperature of medication—20 degrees C.
Dose—0.5 cc. of unfiltered culture to 5 cc. of diluted disinfectant.
Subcultures—one 4 mm. loopful to 10 cc. of broth.

The subcultures were incubated for 48 hours at 37 degrees C. with the following results:

Sample	Dilution	Minutes of Exposure 5	10	15
No. 3797	1:1700	+	—	—
Tank 21	1:1800	+	+	—
2/18/35	1:2000	+	+	—
	1:2200	+	+	+
Phenol	1:80	+	—	—
	1:90	+	+	—

$$\therefore \text{Phenol Coefficient} = \frac{1700}{80} = 21.0$$

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SANITARY PRODUCTS

A Section of SOAP

Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

The Editorial View

MORE so than in previous years, we hear the quality note sounded more distinctly in the sales arguments of household insecticide manufacturers this spring. As much as we dislike to admit it, we feel that quality improvement is being forced on the industry. Many manufacturers see the light and realize that the day of selling any old haphazard concoction as a fly spray is fast passing. Consumers are not as dumb as they used to be, whether they be hotels, railroads, institutions, or the housewife. The higher grade, scientifically manufactured sprays have been "showing up" their inferior competitors. It has become a case of making the quality grade or taking the consequences. Such a change should be a good thing for the whole industry.

WITH the resignation of the chairman, the treasurer, and the secretary of the code authority of the Insecticide and Disinfectant Manufacturing Industry, the code appears to be rather close to complete disintegration. The remaining members of the code authority are admittedly at sea as to what to do. From the NRA, also in the throes of a reorganization and enshrouded in a haze of uncertainty, they have received no help whatsoever. The former chairman, in resigning, did not mince words in branding the administration of the NRA as a farce. That he should be bitter after months of effort which he and his fellow members have spent in attempting to perfect a workable code, is only natural. The code authority has been hamstrung by NRA lethargy and red tape. The code has been just about as completely ignored in the industry as last year's straw hat, those who complied with its provisions being conspicuous by the smallness of their number. Unless it receives an injection of new life through immediate and drastic action on the part of the NRA itself, the insecticide and disinfectant code is in our opinion as dead as a doornail. And we fear that there will be little sorrow and no shedding of tears at its burial.

FOR effective moth control, four ounces of paradichlorbenzene to each one hundred cubic feet of space are recommended by A. H. Pettinger in a recent article in *The Manufacturing Chemist* of London. The minimum requirement in the United States, according to the Department of Agriculture, is one pound of paradichlorbenzene to ten cubic feet, or forty times as much as our friend in London recommends. Nothing even approaching "control" could be secured with such relatively minute quantities as he suggests. This has been proved time and again beyond any question of doubt.

THE future of the Copeland Bill becomes uncertain as its proponents attempt to force on industry,—and on the Senate,—several distasteful and arbitrary features of the bill. Recommitting the bill opens it to further changes. Consequently, the Secretary of the National Association of Insecticide & Disinfectant Manufacturers urges the industry to write or wire their senators again, urging strongly the removal of Paragraphs (j) and (k), Section 402, which affect the testing of germicides and disinfectants.

National Association of Insecticide *and* Disinfectant Manufacturers

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Active — Open to manufacturers and wholesale distributors of disinfectants, germicides, deodorants, insecticides, liquid soaps, polishes, and allied products. Dues —$75.00 per year.

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For further details, communicate with

NATIONAL ASSOCIATION OF INSECTICIDE & DISINFECTANT MANUFACTURERS

John H. Wright, Secretary

CHRYSLER BUILDING **NEW YORK**

Notes of the Trade

S. J. Dunaway, president of Expello Corp., Dover, N. H., reports a forty per cent increase in sales of "Expello" moth products as compared with 1934.

H. W. Baldwin, president of Baldwin Laboratories, Saegertown, Pa., has written a story on the marketing of "Dwin" insecticide which appears in the April issue of *Printers' Ink*, under the title. "Depression Product's Success Story: How Co-ordination Built Distribution and Won Patronage."

Midway Chemical Co. is currently advertising "Fly-Ded" insect powder in a handy spray container.

The 1935 radio advertising campaign of Enoz Chemical Co., again on its insecticides features "Wooley-the-Moth" in a series of adventures.

American Sanitary Products Co., Denver, has moved recently from 2344 to 2255 Lorimer Street.

Mrs. Annie P. McCormick, widow of Rev. Hugh P. McCormick, and mother of Charles P. McCormick, president of McCormick & Co., died March 26 at her home in Baltimore. She was seventy-three years old.

Crest Products Co., 14,000 Sussex Ave., Detroit, has been organized by Philip N. Stinson and George W. Henry to manufacture insecticides and wax products.

O'Connor & Kremp, New York, sales representatives for the Bradford Penn Refining Co., Clarendon, Pa., have been elected associate members of the National Association of Insecticide & Disinfectant Manufacturers.

Dr. Alfred Weed of John Powell & Co., New York, has been appointed chairman of the Standardization and Scientific Committee on Insecticides of the National Association of Insecticide & Disinfectant Manufacturers by President C. P. McCormick to succeed the late Dr. Charles H. Peet of Rohm & Haas Co., Philadelphia. Joseph E. Armstrong of Rex Research, Inc., Toledo, and D. F. Murphy of Rohm & Haas Co. have been appointed as members of this committee.

Stanco, Inc., is operating on a ten per cent larger advertising budget for "Flit" this year, and has started its campaign somewhat earlier than usual. Copy is running currently in eight national magazines and farm papers, featuring a combination offer of a moth bag with every quart of "Flit". When the mosquito season starts it is planned to use strip copy of a comic type in newspapers for the first time. A separate campaign in magazines will be conducted on "Flit" powder.

Derris and Pyrethrum Powders

A Study of Their Protection from Injurious Action of Light and Air [1]

By A. E. BADERTSCHER, McCormick & Co.
and R. WOTHERSPOON, Derris, Inc.

AS is well known, the active principles contained in derris powder and in pyrethrum powder are very toxic to insects. This toxicity acts as a contacticide, as a repellent and as a stomach poison;[2]. The toxic principles found in pyrethrum powder are pyrethrins I and II and the known ones found in derris root are rotenone, deguelin, toxicarol and tubatoxin. The most toxic of these materials are pyrethrin I in the pyrethrum powder and rotenone and deguelin in the derris powder. The toxic principles found in pyrethrum powder and in derris powder are quite poisonous to insects but non-poisonous to warm blooded animals when taken by the mouth in amounts that would normally be obtained with food products.

Unfortunately, the toxic principles in these two powders break down and lose their toxicity in insects upon exposure to air and light. This loss to toxicity occurs when they are applied in the form of fine powders or when the toxic principles are extracted with suitable solvents and applied in the form of sprays. The usefulness of these materials as insecticides will be greatly increased by any treatment that will prolong the time when the toxic materials are effective.

Loss of Toxicity

TATTERSFIELD[3] working in England has shown that pyrethrum dust loses its toxicity to insects when exposed to light in the presence of air or of oxygen and that it also loses its toxicity in air in the absence of direct light. Jones et al[4] of the Bureau of Chemistry and Soils at Washington (now of the Bureau of Entomology), have shown that rotenone, and other related toxic principles of derris root, lose their toxicity in the presence of light and air or oxygen, but when exposed to light in the absence of oxygen or of air or when exposed to air in the absence of light, there was little or no loss of toxicity in the rotenone.

Our investigations have corroborated the findings of Tattersfield on pyrethrum powder and of Jones et al on rotenone and have further shown:

1. That pyrethrum powder loses most of its toxicity when exposed to the action of air and sunlight in the summer time within a few days.
2. That derris powder requires at least twice as long as pyrethrum to lose most of its toxicity when exposed to the action of air and sunlight in the summer time.
3. That the rapidity of the loss of toxicity in pyrethrum powder and in derris powder is largely directly dependent upon the intensity and duration of the light.
4. That pyrethrum powder loses its toxicity when exposed to air in the absence of direct sunlight but much slower than when direct sunlight is present.
5. That derris powder loses its toxicity relatively much slower than pyrethrum powder when exposed to air in the absence of direct light.

These findings suggest the possibility that if in practice the pyrethrum powder and the derris powder should be protected from the injurious action of the sunlight the efficacy of the products would be greatly improved. This fact was also indicated by the investigations of Jones et al[4] who found that when equal parts of lamp black was added to powdered rotenone the injurious action of light was retarded. Our investigations have developed methods whereby we are able economically to materially prolong the toxicity of the pyrethrum powder and the derris powder. The following results are taken from data submitted in the fellowship reports.

Methods of Conducting Tests

SEVERAL biological methods of testing the toxicity of the pyrethrum powder and the derris powder were followed. One method was a modification of that used by Campbell and Sullivan[5] in which the toxic principles were suspended at high dilutions in water and tested against mosquito larvae. Observations were taken to determine the time in minutes when 50% of the mosquito larvae were paralyzed and remained at the bottom of the container. This method gives a delicate biological test for comparing the toxicity of different samples.

The second biological method of testing consisted in diluting the powders or acetone suspensions of the powders in water and applying them as a spray against plant lice. The per cent dead and moribund were determined 24 or 48 hours after spraying. The species

[1] McCormick & Co., Inc. and Derris, Inc., have sponsored research fellowships at Rutgers University for a number of years on the toxicity of pyrethrum and derris compounds. The data reported in this paper is a small part of that obtained during the course of the investigations. It is confined entirely to finely ground pyrethrum powder and finely ground derris powder.

[2] Hamilton & Gemmell Some Field Tests Showing the Comparative Efficiency of Derris, Pyrethrum and Hellebore Powders on Different Insects. Journal of Economic Entomology, Vol. 27, No. 2, April, 1934.

[3] Tattersfield, F. 1932 "Loss of toxicity of pyrethrum dust on exposure to air and light." Journal Agr. Sci., Vol. 22, pages 396-417.

[4] Jones, H. A., Gersdorf, W. A., Gooden, E. L., Campbell, F. L., and Sullivan, W. N., 1933, "Loss of toxicity of rotenone and related materials exposed to light." Journal of Econ. Ent., Vol. 26, No. 2, pages 451-470.

[5] Campbell, F. L. and Sullivan, W. N., 1933, "Relative toxicity of nicotine and anabasine, methyl anabasine and lupinine for Culicine mosquito larvae." Journal of Econ. Ent., Vol. 26, No. 2, pages 500-509.

of plant lice used was the nasturtium aphis (*Aphis rumicis.*)

The third biological method consisted in applying the powders as dusts against plant lice under controlled laboratory conditions so that the charge of dust was uniformly the same[6].

Field tests were also conducted against various insects, particularly larvae of the eastern tent caterpillar (*Malacosoma americana*) and cabbage worms, particularly the larvae of the Diamond back moth (*Plutella maculipennis*). The investigations on the cabbage worm consisted of several months intensive work done in Florida under field conditions.

In the first laboratory tests thin films of the dust were applied approximately one particle thick to glass plates and exposed to the action of the sun's rays for definite periods of time. The loss of toxicity in the pyrethrum powder and the derris powder varied considerably probably due to the variation in intensity of the sunlight. Therefore, later laboratory test were made in which the materials were exposed to light from an Uviarc mercury vapor lamp operating on 118 volts with a current of 4.8 amperes and 450 watts. The light from this lamp was found to be considerably more active in destroying the toxic principles of the pyrethrum powder and the derris powder than was sunlight. The length of exposure and the intensity of the light could be controlled and consistent results in reduced kill coordinated with loss of toxicity were obtained.

Pyrethrum Tests on Mosquito Larvae

LABORATORY tests on the 4th instar mosquito larvae of *Culex quinquefasciatus* were made in which the pyrethrum powder was diluted so that one part of the pyrethrins was contained in 6,000,000 parts of water. Numerous methods of treating the pyrethrum powder to prevent loss of toxicity upon exposure to light and air were tested. The tests given in the following table are those showing the greatest efficiency in protecting the pyrethrum powder. Three samples of pyrethrum powder were tested in each experiment, namely, the untreated pyrethrum powder, the untreated pyrethrum powder exposed to light and the treated pyrethrum powder after exposure to light. The period of exposure of the pyrethrum powder to light of the mercury vapor lamp varied from 2 to 6 hours with an average of about 3-1/3 hours.

Toxicity of Pyrethrum Powder to Mosquito Larvae

No. of Test	*Material*	*Treatment*	*Average Exposure*	*Minutes for 50% Down*
14	Pyrethrum Powder	None	None	1.14
14	Pyrethrum Powder	None	3⅓	157.5
6	Pyrethrum Powder	8A	4⅔	7.5
8	Pyrethrum Powder	9A	4⅓	13.5

There is no method of figuring from the data given the actual loss in the toxicity of the exposed pyrethrum powders. However, the untreated and exposed pyrethrum powder lost the greater part of its toxicity while the treated and exposed pyrethrum powder lost only a small part of its toxicity showing a decided protection by the treatment.

Pyrethrum Tests Against Plant Lice

EXPERIMENTS were conducted on the masturtium plant louse using the pyrethrum powder at two different dilutions; one in which the pyrethrins were diluted 1 part in 15,000 parts of water and the second in which they were diluted 1 part to 20,000 parts of water. The water contained 0.1% coconut fatty acid soap in order that uniform wetting might be obtained. The following data are the average of a number of tests and show the dead plant lice 24 hours after spraying.

Toxicity of Pyrethrum Powder to Plant Lice

No. of Test	*Kind of Material*	*Treatment*	*Hours Exposure*	*Per Cent Dead*	*Per Cent Dead after Subtracting Water and Soap Check*
15	Water check	....	....	17.2	....
15	Water + 0.1% soap	....	....	27.2	....
15	Pyrethrum	None	None	72.8	45.6
15	Pyrethrum	None	3	43.0	15.8
6	Pyrethrum	8A	3	57.1	29.9
9	Pyrethrum	9A	3	69.2	42.0

The loss of efficiency in the exposed pyrethrum powders may be figured by subtracting the per cent kill obtained in the water and soap check from the per cent kill obtained in the pyrethrum sprays. Then divide the per cent kill in each of the exposed pyrethrums powders by the per cent kill in the unexposed pyrethrum powder. Thus, figuring the untreated and unexposed pyrethrum powder as retaining 100 per cent of its efficiency we find that after 3 hours exposure the untreated pyrethrum powder lost 65.4 per cent of efficiency; the pyrethrum powder treated as in 8A lost 34.5 per cent of its efficiency and the pyrethrum powder treated as in 9A lost only 8.2 per cent of its efficiency.

The experiments against the mosquito larvae and the plant lice show a decided protection from loss of toxicity of the treated pyrethrum powder upon exposure of light. The exposure of 2 to 3 hours seems a rather short time. However, comparative tests indicate that in general, one hour exposure under the mercury vapor lamp reduced the toxicity approximately as much as 8 hours exposure to sunlight on a clear day during June or July. It must also be remembered in evaluating the data that the pyrethrum powder loses its toxicity fairly rapidly and that the film of pyrethrum powder on the glass plates when exposed to light were approximately 1 particle thick. Therefore, very little protection was afforded to the particles by overlapping.

Derris Tests Against Nasturtium Aphis

THE derris powder used in the tests was finely ground air floated powder containing 6% rotenone and slightly more than 18% total acetone extractives. The dusts were spread about 1 particle thick on thin glass plates and exposed to the mercury vapor lamp for 24 hours. Water suspensions of the derris powder after

[6] Campbell, F. L. and Filmer, R. S., 1928. A Quantitative Method of Estimating the Relative Toxicity of Stomach Poison Insecticides. Fourth International Congress of Entomologists, August 1928. Vol. II.

exposure to the light varied considerably probably because of the difficulty of rapidly extracting the toxic principles in the water. Therefore, acetone extracts of the dusts were prepared and diluted so that the concentration of the rotenone was 1 part to 40,000 parts of water. The number of dead plant lice were determnied at the end of 24 hours. The per cent dead for 3 different sets of experiments is as follows:

Toxicity of Derris Powder to Plant Lice

Methods of Treatment	*Experiment* No. 1	No. 2	No. 3	*Average*	*Per Cent Kill due to the Derris*
Tap water and acetone	13.8	13.9	12.0	13.2	...
Tap water	20.5	15.3	10.6	15.5	...
Unexposed Derris Powder	88.0	69.7	86.8	81.5	67.1
Exposed Derris Powder	63.2	44.0	65.4	57.5	43.1
DI Treated and exposed Derris Powder	73.9	67.1	79.0	73.3	58.9
DII Treated and exposed Derris Powder	74.5	75.0	77.0	75.5	61.1
DIII Treated and exposed Derris Powder	66.8	73.5	74.9	71.7	57.3

These data bring out that the effect of 24 hour mercury vapor lamp exposure on untreated derris powder is a decrease in kill of 24 per cent (i.e. from 67.1 per cent kill to 43.1 per cent kill) which by direct comparison equals a loss of 35.8 per cent efficiency. On the other hand, the treated and exposed derris powders show (an average of the three results tabulated) a difference in kill of only 8.0 per cent less than the unexposed derris powder (i.e. as between 67.1 per cent kill and 59.1 per cent kill) or a loss of only 12.0 per cent efficiency.

The comparison of greatest practical value is as between the results achieved with untreated exposed derris powder and treated exposed derris powder. This should be considered apart from the check results with tap water and acetone a kill of 14.4 per cent. This untreated exposed derris powder contributes a kill of 43.1 per cent while treated exposed derris powder contributed a kill of 59.1 per cent, showing an increase in efficiency through protective treatment of 37 per cent by direct comparison.

Eastern Tent Caterpillar Tests

FIELD tests against nearly full grown larvae of the eastern tent caterpillar (*Malacosoma americana*) were conducted using derris powder treated similar to the methods used in the tests reported on the plant lice. The dusts were made up so they contained 16.66% of the concentrated derris powder giving 1% rotenone in the derris powder. These dusts were then diluted 1 part to 100 parts of water and sprayed upon wild cherry trees. About 24 hours after spraying, tent caterpillar nests containing caterpillars were fastened to limbs of the sprayed trees. Larvae were beginning to feed about 3 days later upon foliage of the trees sprayed with the unprotected derris powder and about 6 days later on the foliage of the trees sprayed with the protected derris powder. Many of the larvae in all of the lots refused to eat, greatly decreased in size and either dropped off the trees or hung on by attaching themselves with the abdominal prolegs. The protected derris powder was distinctly more lasting and more toxic after three days than was the unprotected derris powder.

Field Tests on Cabbage

THE protected pyrethrum and derris powders were tested in January, February and March, 1934 against cabbage worms on cabbage in the field in Florida. The most prevalent cabbage worms present were larvae of the Diamond back moth (*Plutella maculipennis*). The methods of conducting the tests were as follows. All cabbage worms were removed from the plots to be treated. The plants were then dusted with the materials to be tested and cabbage worms, collected from undusted plants, were placed upon the dusted plants. In some tests worms were placed upon the plants immediately after dusting and counts of dead, live and missing worms were made 24 and 48 hours after placing them on the plants. All live and dead worms were then removed and fresh worms applied three days after dusting and counts again made 24 and 48 hours after placing the worms upon the plants. By continuing this method of tests data were obtained upon the effectiveness of the dusts in killing the larvae or causing them to disappear immediately after the dusts were applied, 3 days after the dusts were applied, 6 days after the dusts were applied and in a few tests, 9 days after the dusts were applied. Considerable difficulty was encountered in obtaining uniform results due to the rapid growth of the cabbage plants, rain washing the derris or pyrethrum powders off the cabbage plants, and the fact that many of the larvae affected by the treatments dropped off the plants and were carried away by spiders or ants. Since only a few worms were missing on the check or untreated plots it was assumed that the majority of the missing worms were affected by the treatment. All tests were discontinued and new ones started after each rain.

The per cent dead worms and dead and missing worms are given in the following table. The figures are obtained by averaging all of the tests with the derris powder.

Tests with Derris Powder Against Cabbage Worms

Materials	*% Dead Worms*	*% Missing Worms*	*% Dead and ing Worms*
Check plants, no dust	0.6	0	0.6
Derris check, not treated	35.6	27.4	62.0
Derris 1D	55.9	27.1	83.0
Derris 1DD	68.9	19.8	88.7
Derris 4D	39.3	45.6	84.9
Derris 5D	57.6	32.4	90.0

The data bring out that the treated derris powders were decidedly better than the untreated derris powder. The best treated dust (1DD) showed an increase in the number of dead worms of 33.3% (68.9% kill minus 35.6% kill) which by direct comparison shows an in-

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Sweeping Compounds

THE first sweeping compound was ordinary sawdust moistened with water at the time of application and used for laying the dust in sweeping concrete, wood, and other dusty floors. Sawdust or fine shavings were merely wet down with water and thrown about the floor prior to sweeping. This type of "sweeping compound" still finds a wide use, mostly for rough floor sweeping of large areas. Damp sand was, and still is used as a dust layer in floor sweeping. From these simple beginnings, the modern sweeping compound has developed to a point where it has become an important product of the sanitary products industry. From a few well-known brands of twenty or thirty years ago, the manufacture has expanded to include hundreds of brands of almost an equal number of formulas. Like in everything else, some are good and some are poor. Some are made to sell at a price, while others are made to do the job for which they were designed.

Because the original sweeping compound made solely with water was generally unsatisfactory in most respects, the use of mineral oil of various types came to supplant the water in whole or part. The water evaporated unless the material was stored in air-tight containers, leaving behind the dry materials. The same was true where kerosene was used. Various and sundry other types and grades of oil were tried from time to time, including crude oil, heavy lubricating oil and others. By a process of elimination, the oil base of most sweeping compounds was narrowed down to paraffin oil, the equivalent of a light machine oil with a flash point over 300 deg. F. and under 450 deg. F. This oil is light enough to mix well with the dry ingredients and is also heavy enough that evaporation is not a problem. It also gives the best consistency to the compound for efficient sweeping and good dust absorption.

In spite of changes which have taken place in sweeping compound composition over the years, sawdust and sand still form the major portion of the finished material. Sawdust is the best material at anything like an equivalent price for absorbing and holding the oil and other liquids and at the same time giving the necessary bulk to the product. The sand gives the necessary weight and density. According to the variation in the proportions of these two ingredients, depends the physical character of the finished compound. Some formulas call for equal parts of sand and sawdust by weight. Others specify three times as much sawdust as sand by weight. Government specifications call for thirty-five up to fifty per cent of sand in one type of sweeping compound and up to seventy per cent in another. So between the low figure of about twenty per cent sand and the Government top of seventy per cent, there is a chance for a wide variety of products.

By far the greatest bulk of sweeping compound sold today is a mixture of sawdust, sand, and mineral oil with innumerable variations in proportions, in odor, and in the presence of other ingredients. However, the newer type of sweeping compound containing polishing waxes is an outgrowth of the development of the water

emulsion floor wax and seems to be gaining in popularity for some uses even though its cost is considerably above that of the mineral oil type. In the wax type, the mineral oil is replaced with waxes, resins, water, and emulsifying agents. Instead of leaving behind a thin film of oil on the floor, a film of wax is deposited.

In looking over the composition of the mineral oil sweeping products, the material as used by the U. S. Government might be considered first. The specification calls for a clean, fine sand or feldspar sand to an amount between 35 and 50 per cent by weight. At least 99 per cent of this sand must pass through a No. 20 sieve. The sawdust content is between 25 and 35 per cent, also by weight. It must be a fine sawdust, 99 per cent through a No. 8 sieve. Refined mineral oil, such as paraffin oil, is required between 15 and 20 per cent. Water shall not be more than 10 per cent by weight. In fact, the total volatile matter at 105-110 deg. C. which in the average sweeping compound would be water, must not exceed 10 per cent. This requirement also bars out the use of lighter petroleum oils which are also barred by the required test for inflammable vapors. The very first test is for inflammable vapors and if any compound is shown to give them off, it is rejected by the Government without further test.

There are no definite specifications for color or odor, except that the compound must not stain floorings or adjacent surfaces. The color may be natural or the material may be artificially colored by a pigment or dye mutually agreed upon. The same is true of the odor. The only mention in the specification is that it shall not be objectionable and may be agreed upon in advance based on a sample submitted. The use of fatty oils such as linseed or the like is not permitted.

Along with compounds made especially to meet Government specifications, there are innumerable commercial types, some of which are within the Government limits and some of which are not. What might be termed a more or less standard commercial formula and which also meets Government requirements is sawdust 30 per cent; sand 40 per cent; paraffin oil 15 per cent; water 10 per cent; miscellaneous 5 per cent. (All by weight.) On the whole, however, the commercial products seem to contain a higher proportion of sawdust than the Government specification. Another commercial formula calls for the following proportions by weight, this formula, however, not meeting Government specifications:

Clean sand	40%
Fine sawdust	40%
Paraffin oil	10%
Water	10%

Then there are numerous other combinations which contain additional products. A suggested composition contains a small proportion of paraffin wax as follows: (By weight)

Sawdust	80 parts
Fine sand	40 parts
Light lubricating oil	30 parts
Paraffin wax	1 part

Another composition for a compound designated for polished floors is given in the following, this formula calling for salt in equal amount with the sand. For unpolished, rough floors, it is suggested that the parts of paraffin oil be increased from eight to twelve.

Fine sawdust	32 parts
Sand	12 parts
Salt	12 parts
Paraffin oil	8 parts
Paraffin wax	2 parts
Pine oil	1 part

Outside of the three main ingredients, sawdust, sand and oil, numerous other things have been recommended and are used. Salt has been mentioned above, although what its specific purpose might be in an oil compound is difficult to see. In a cheap water compound, it might have some use in holding the water and keeping the material damp. Naphthalene flakes are included in some products to give an odor and perhaps with the idea of repelling insects. Eucalyptus oil and cedar wood oil are used sometimes as perfumes. Pine oil, however, seems to be the most commonly used perfuming material. It also under some conditions may have a disinfecting value. Some formulas specify pine sawdust and others cedar sawdust which have a pleasant odor in themselves. Like in most every case where a real cheap perfuming job is to be done, oil of myrbane makes its appearance here and there. However, pine oil seems to be the most used and the most desirable odor in keeping with the purpose for which a sweeping compound is used.

Color and Staining

WHEN it comes to consideration of color in a sweeping compound, considerable thought must be given to the places where the product is to be used and type of colors which are suitable. Colors which will easily stain floors, baseboards, etc. are naturally barred. Of course, almost any dyestuff under the right conditions will stain. Colors must be used sparingly and with care. Perhaps it is best where a manufacturer is uncertain or is having definite trouble with color, to consult one of the color suppliers for expert advice on the subject.

Although various shades of green are the most widely used color, red is also seen. In fact, one of the oldest branded products on the American market is colored red and this red color has been imitated upon occasion. Where the color is applied in water and mixed with the sawdust first, naturally a water-soluble color is required. Malachite green has been mentioned. Where the color is applied to the material in the oil, an oil soluble color such as alizarine green has been recommended. Azo red in oil for red color is noted. The use of cheap pigments such as red oxide of iron have also been recommended. The action of an insoluble pigment is of course different from that of a dyestuff in the case of a stain. The particles of pigment may become imbedded in or merely rest on the surface or material

which is stained. They can usually be washed away. On the other hand where a dye dissolved in oil or water makes a stain, the stain may be an actual dyeing operation on the surface or material and it may be impossible to remove the stain by washing or cleaning for this reason. The Government departments in some cases will accept a sweeping compound without color, but for commercial sale, a distinctive shade gives the product a much better appearance and is essential.

Water Wax Compounds

SWEEPING compounds which contain water-wax emulsions are designed to go a step further than the regular mineral oil type. In addition to laying the dust during the sweeping operation, they leave a thin film of self polishing wax on the floor. Thus, the floor is cleaned and waxed in one operation. Wax sweeping compounds do not contain any mineral oil, the oil being replaced wholly by the water-wax emulsion. Inasmuch as the only liquid present in such compounds is water, they are subject to the drawbacks of evaporation, drying, and separation of the solid waxy and resinous ingredients. For this reason, their packaging and storing during use must be absolutely air tight.

Wax sweeping compounds are used primarily on polished wood, linoleum, and rubber floorings. To use them on rough wood, stone, or concrete is obviously incorrect. The oil type is superior for the latter purposes. The cost of the wax types also restricts their use as they are made with high cost carnauba, candelilla and other waxes and resins. In fact, the wax sweeping compound is nothing more than a regulation water wax absorbed in a mixture of sand and sawdust. (For further details on composition of self polishing emulsion floor waxes, see article in March, 1935, issue of SOAP on "Floor Waxes" by Dr. C. A. Tyler.)

Government specifications for the water-wax type sweeping compound call for many of the same requirements as for an oil-type compound—no objectionable odor, a product to be mutually agreed upon by Government department and seller, no staining, no inflammable vapors, etc. In the wax type, not more than twelve per cent shall be volatile at 105-110 deg. C. which for practical testing means the water content. The sand shall be a fine, clean sand or feldspar sand of the same quality as for the oil type and it shall make up not less than sixty per cent of the compound by weight and not more than seventy per cent. Finely ground sawdust is called for at not less than five per cent or more than ten per cent. The remainder is to be waxes and emulsifying agents.

Of course in figuring on a material of this type, the manufacturers would probably take of the maximum of all ingredients except the waxes which are the most expensive. This would mean 70 per cent sand, 10 per cent sawdust, and 12 per cent water, a total of 92 per cent. The 8 per cent balance must be waxes and emulsifying agents. This latter figure seems quite high in comparison to the total water content allowed and in comparison to the relative wax and other solid content of the average water emulsion floor wax.

Manufacture and Equipment

BECAUSE the manufacture of sweeping compounds is primarily a mixing operation, almost anything in the way of equipment has been used for the purpose. Upon occasion, the ingredients have been spread out on the floor and mixed with a shovel. Needless to say, this makes a poor product. Uniformity, which is so essential, cannot be secured by hand mixing. Various types of dry and paste mixers are in use. Ordinary concrete mixers are being used with apparent success to secure a uniform product. However, standard mixing equipment specifically designed by the machinery manufacturer for the purpose, is unquestionably best. Mixing these raw materials and working in the oil is not as simple an operation as it might appear.

Ordinary practice is too often to dump the ingredients in the mixer without any set order and turn the switch. The oil in which the color has been dissolved should first be added to the sawdust and worked in. The pine oil or perfume should then be added and worked through. The sand is then added gradually and the whole mass worked until it is perfectly uniform. If water is included in some cases, it can first be added to the sawdust. The sand with the oil can then be worked in. The color can be dissolved in either water or oil according to the type used. If a pigment is used it is added to either ingredient as it is worked or gradually to the mixture. The chief thing of course is perfect uniformity, making sure that every particle of sawdust and sand is wet with the oil and that the color is evenly distributed throughout the mass.

Marketing and Competition

THE high grade sweeping compounds have, like in every field, suffered by competition with cheap imitations. In sweeping compounds, perhaps more so than in other items of the sanitary products line, almost any kind of product can be made to meet any kind of a price. Where there are no specifications to be met, it is difficult to tell what the buyer is liable to get. This is perhaps the strongest reason why jobbers and large consumers should buy on definite specifications, or adhere strictly to branded products of known quality. To call for bids and merely consider price alone in placing orders, is to invite low grade unsatisfactory products.

Sawdust and sand are cheap, and water is even cheaper. Excess water to cut down costs is a poor expedient to meet excessively low prices. Cheaper oils to replace the paraffin oil is another procedure which cuts costs but cuts quality at the same time. Because sweeping compounds do sell at such comparatively low prices,—even the better grade products,—the tendency has been for those whose chief competitive measure is the cut price, to give scant consideration to anything except reducing costs. Many a jobber who is buying at what looks to be a low price is in reality paying a fancy price for

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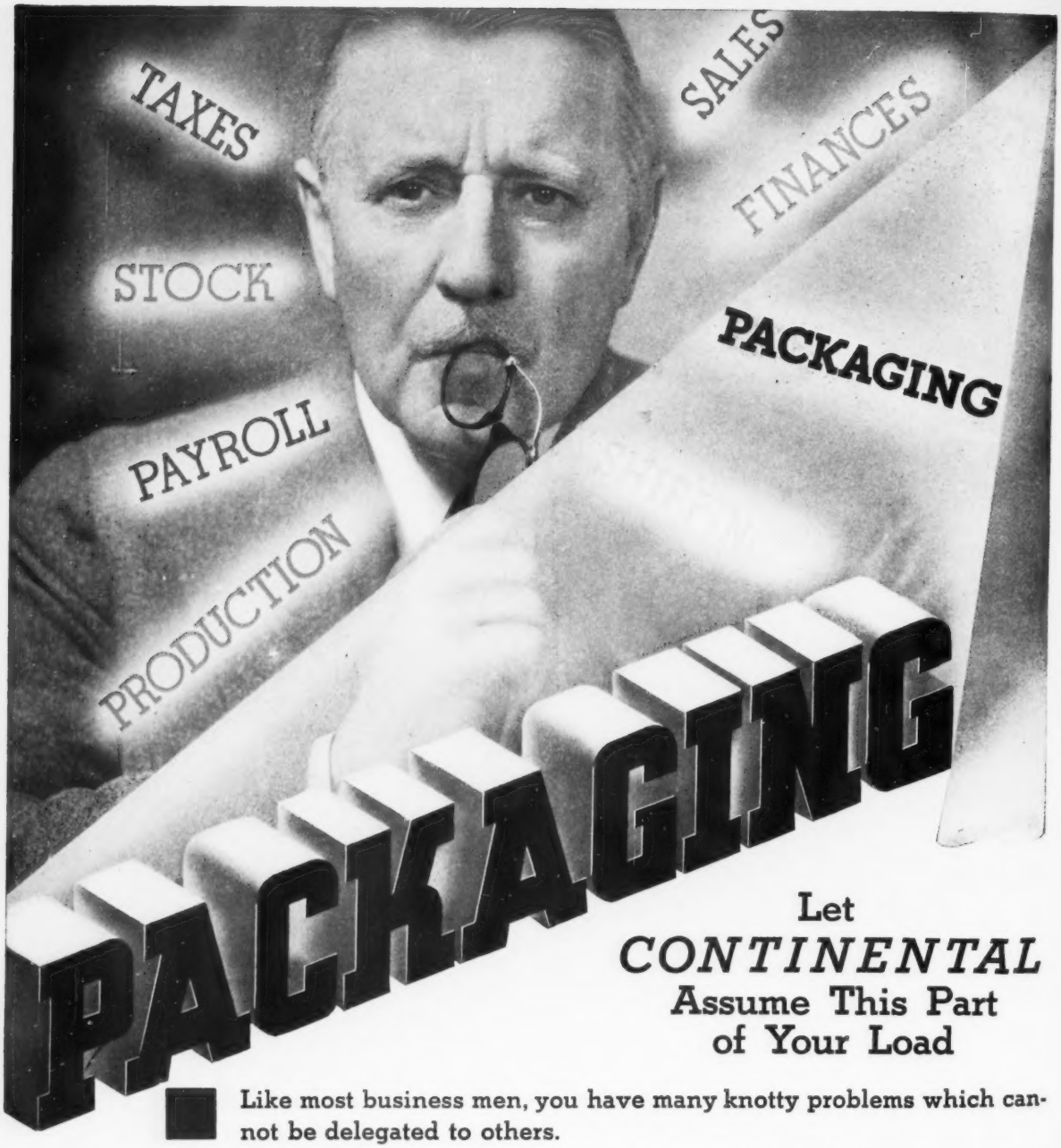

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What Is Cubé?

By DR. R. C. ROARK*

CUBE has attracted much attention from insecticide manufacturers, entomologists, chemists interested in insecticides, and importers of South American products since the finding of rotenone in it by Clark in 1929. Rotenone and related compounds are found in several species of *Cracca* (*Tephrosia*), *Derris*, *Lonchocarpus*, *Millettia*, *Mundulea*, *Ormocarpum*, and *Spatholobus*. These plants are widely distributed through the tropics. In view of the trade practice of calling most of the rotenone-bearing plant material exported from South America, "cube," it is timely to inquire into the significance of this term. Several patents refer to "cube" and it is desirable to know exactly what is meant by this word in order to avoid infringing the rights of others.

The word "cube" has two meanings: (1) Cube is barbasco, which in Spanish-speaking countries is any fish-poisoning plant; and (2) Cube is any species of *Lonchocarpus*, more especially *L. nicou*.

Authorities for the definition that cube means barbasco are as follows: W. R. Allen wrote N. E. McIndoo of the Bureau of Entomology, U. S. Department of Agriculture, on June 15, 1921, as follows: "Cube or Barbasco . . . is used as a wash for killing parasites. The enclosed snapshot shows the washing of a cow to kill ticks. I have heard no comment concerning the other parts of the plant being used besides the root, so doubt if it is milky and poisonous in any other part." Dr. W. R. Allen is an explorer who procured a supply of cube for the Department while collecting fishes in 1920 in Peru for Indiana University.

W. J. Dennis, at the time of applying for United States Patent 1,621,240 on April 16, 1923, said: "The invention consists of a compound obtained from the root or plant known in Peru as cube, which is found in Peru and other South American countries. The plant is a woody shrub classified by some native botanists as of the family Solanaceæ."

W. E. Safford of the United States Department of Agriculture in 1924 defined cube as follows: "The name 'cube' is applied, in all tropical America, to several plants belonging to distinct genera which are used as fish poisons. Among them are species of Jacquinia, and several plnats belonging to the family "Sapindaceae." (Footnote on p. 34, U. S. D. A. Dept. Bull. 1201 by McIndoo and Sievers.)

The H. K. Mulford Company, Philadelphia, Pa., in a letter addressed to R. C. Roark, under date of October 27, 1928, wrote as follows: "Referring again to previous correspondence, particularly our letter of May 10, 1928, and your reply of May 14th, we now take pleasure in forwarding a package containing approximately ten pounds of 'cube' root obtained for us by our representative in Peru and transmitted with the following information:

" 'This variety of Barbasco which I have secured for you is also known botanically as Tefrosia Pescatoria, and comes from the interior district of Peru or the Andes. It can be secured from Huancayo or Tarma, where the Indians bring it from the mountains.

" 'This variety of Barbasco must not be confused with another so-called barbasco which is of the Cretacea or Espostoa Lanata, and which is used for entirely different purposes and does not contain the chemical elements found in the Cube Root and which are used for the purpose of paralyzing the fish in rivers, etc'."

The Field Museum of Natural History, Chicago, Ill., in answer to an inquiry concerning the botanical source of cube from Peru, wrote on November 23, 1928, as follows: "Answering your letter of November 17th, the 'Cube' material in Field Museum to which you refer was collected at Huancayo, Peru. It consists of dried stems only, and these have been referred doubtfully to the family Piperaceae, but the reference is open to question. The material was purchased in the market at Huancayo, where it was stated that it was employed for stupefying fish and killing rats."

George A. Makinson, American Consul General at Callao-Lima, Peru, under date of April 25, 1929, wrote as follows: "The Consulate General has discussed this plant ('cube') with the Agricultural Division (Seccion de Agricultura) of the Ministry of Fomento and with officials of the leading Agricultural Society but was unable to obtain any satisfactory information. It was finally ascertained through a professor of biology at the University that this plant (*Tephrosia*,—family *Leguminosas*) is produced in the interior of Peru and in the powdered state is used by the Chuncha Indidans as a fish poison. The root is powdered and scattered in streams where fish are known to be abundant. It is also dried and used as an insecticide. The Professor added he believed in the markets of Huancayo in the Sierra that this product could be obtained."

Makinson in a later report (June 19, 1929) stated that cube "is not produced in commercial quantities nor sold save at small local shops in Huancayo and other Sierra towns." . . . "Other sources of supply are along the banks of some of the large rivers of the Peruvian mountains. Here it is known as barbasco and used exclusively by the natives as a fish poison."

Edward G. Trueblood, American Vice Consul in Charge, La Paz, Bolivia, wrote on June 27, 1929, as

* Dr. Roark is chief of the Insecticide Division, Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, Washington.

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follows: "Cube is the only plant on the list contained in the Department's Instruction of February 5, 1929, which the Consulate at La Paz has been able to locate in Bolivia. According to the information supplied this Consulate by Senor Florencio Portugal of Chulumani, Sud Yungas, the Indians call this plant 'Zacha'; it is used to poison fish, and grows in the Yungas valleys at altitudes of from 1,000 to 2,000 metres above sea level. The plant grows to a height of about two metres, with dark blue, almost black flowers the shape of pansies. It is a dicotyledonous plant and is supposed to belong to the Sapindaceae family. The Indians pound up the roots of the plant and throw them into streams and rivers, thereby drugging the fish therein."

O. C. Townsend, American Commercial Attache, Lima, Peru, in a letter to R. C. Roark, dated July 9, 1929, listed the names of three firms in Peru which were in a position to supply "the roots of the fish-poisoning plant known as cube (*Tephrosia piscatoria*)."

Harold D. Clum, American Consul in Charge, Guayaquil, Ecuador, wrote on July 19, 1929, as follows: "I am informed by the local branch office of the Department of Agriculture of Ecuador that the names cube and barbasco, especially the latter, are applied to various plants which are used to poison fish, and that one of these is identified as *Jaquinia armillaris*."

O. C. Townsend, United States Department of Commerce, Bureau of Foreign and Domestic Commerce, in World Trade Notes on Chemicals and Allied Products 3 (24): 9-10, 1929, stated: "Cube is either *Tephrosia piscatoria* or *T. cinerea*. It is used in Peru as a wash for killing parasites, such as ticks on cattle and the insects on cacao leaves."

Kahn and Cia of Iquitos, Peru, dealers in cube root, wrote the Buckingham Animal Hospital of Washington, D. C., on October 31, 1929, as follows: "For your information, we beg to add that no export business has been done so far in this line, but during the last few weeks we have received many sample orders for 'Cube' (*Barbasco legitimo*), all from the United States, which we are dispatching in the same way."

The United States Department of Commerce, Bureau of Foreign and Domestic Commerce, in World Trade Notes on Chemicals and Allied Products 4 (20): 11-12, 1930, entitled a report on cube as follows: "Cube (Barbasco), a Botanical Insecticide."

Messrs. E. P. Killip and Albert C. Smith of the United States National Museum and the New York Botanical Garden, respectively, have an interesting article on South American Fish Poisons in the Report of the Smithsonian Institute for 1930, pages 401-408. On page 403 of this article the following statement is made: "At Aina, several days of travel southeast of Huancayo and our first stop in the montana, we were shown a plant in cultivation called cube. It was clearly *Tephrosia toxicaria*, and after much questioning we were told that farther inland there was another much more potent fish poison, cube de almidon (starch cube). The plant at Aina was known as mutuy cube, from its resemblance to the well-known dye plant *Indigofera suffruticosa*, locally called mutuy." Furthermore, in this same article, the title to photograph No. 2, Plate 4, which depicts a cube tree as "A Plantation of 'Cube' or 'Barbasco.'"

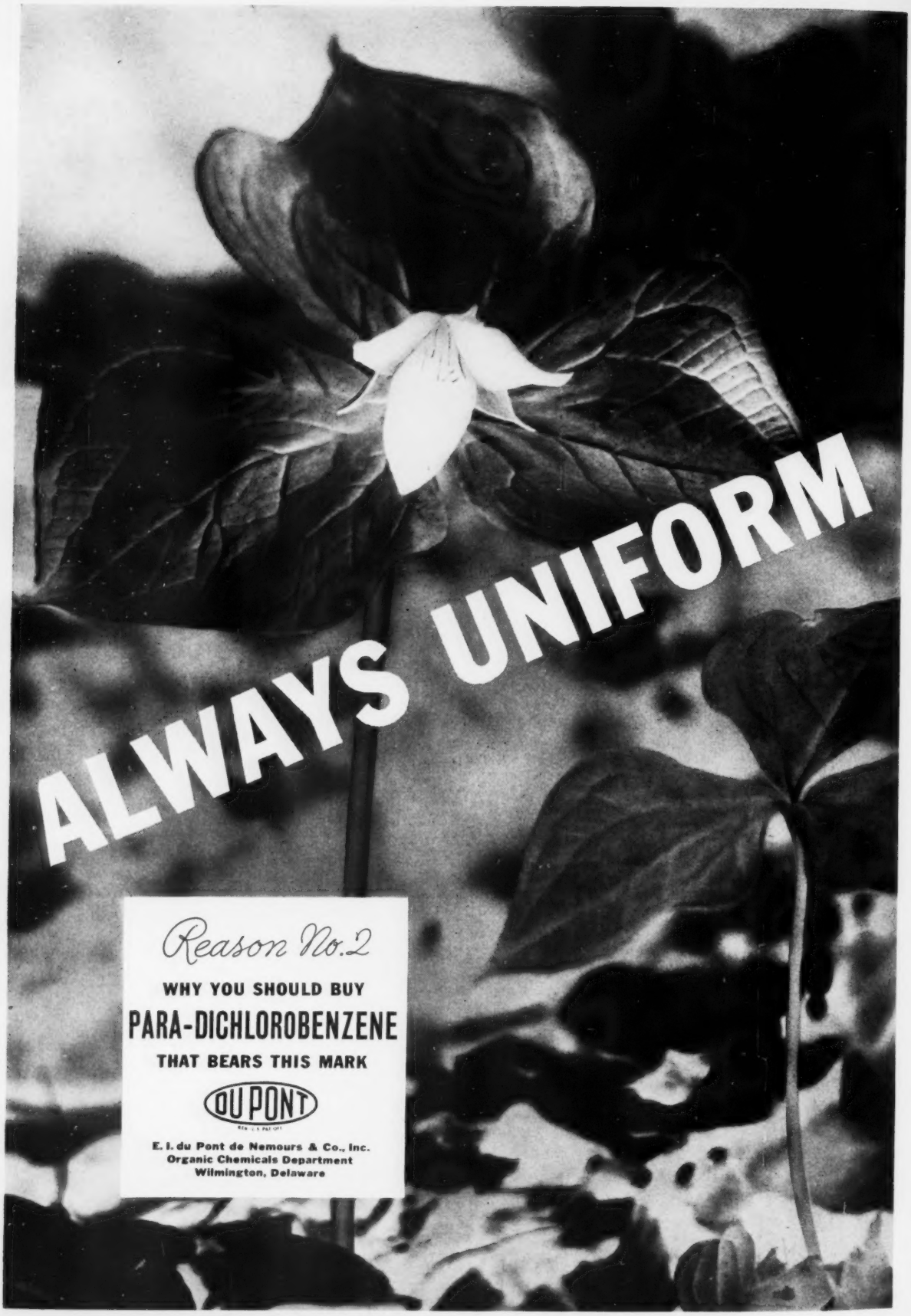
The early confusion regarding the botanical identity of cube and the fact that cube is the same as barbasco are brought out in the following table:

Date	*According to*	*Cube is*
1921	Allen	Barbasco.
1923	Dennis	A woody shrub of the family Solanaceae.
1924	Safford—U. S. Dept. Agriculture	Any one of several plants used a fish poisons—such as species of Jaquinia (family Myrsinaceae) and species of the family Sapindaceae.
1928	Peruvian representative of H. K. Mulford Co.	A variety of barbasco — *Tephrosia piscatoria* (family Fabaceae).
1928	Field Museum of Natural History.	Belongs to family Piperaceae.
1929	University of Peru—through American Consul General Makinson.	Tephrosia.
1929	American Consul General Makinson.	Barbasco.
1929	American Vice-Consul Ed. G. Trueblood, La Paz, Bolivia.	Belongs to family Sapindaceae.
1929	American Commercial Attache O. C. Townsend, Lima, Peru.	*Tephrosia piscatoria.*
1929	American Consul H. D. Clum, Guayaquil, Ecuador.	Same as barbasco, a name applied to various fish-poisoning plants, one of which is *Jaquinia armillaris* (family Myrsinaceae).
1929	American Commercial Attache O. C. Townsend, Lima, Peru.	*Tephrosia piscatoria or Tephrosia cinerea.*
1929	Kahn and Co., Iquitos, Peru.	Barbasco legitimo.
1930	U. S. Dept. of Commerce.	Barbasco.
1930	Killip & Smith & U. S. National Museum and New York Botanical Garden.	*Tephrosia toxicaria* (= mutuy cube) also barbasco.
1932	E. P. Killip—U. S. National Museum.	Barbasco, also Timbo.
1934	Asst. Trade Commissioner J. W. Ives, Rio de Janeiro, Brazil.	Timbo in Brazil. Conapi or Pacai in Peru. Nicou or Haiari in the Guianas.
1934	American Vice-Consul Ed. McKee, Callao-Lima, Peru.	Barbasco.
1934	Seil, Putt and Rusby, New York City.	Barbasco.

It is plainly brought out in the above statements that cube is not the name of a specific plant, but is applied loosely to a number of fish-poisoning plants belonging to various genera and even families of plants,—in fact "cube" is used in much the same way as "barbasco," which, according to Killip and Smith (Smithsonian Institution Report for 1930, page 404), is defined as follows: "*Barbasco*, the general word for fish-poison plants in Spanish-speaking countries, was applied to all fish poisons, though *Lonchocarpus nicou* was sometimes spoken of as *barbasco legitimo*."

E. P. Killip of the United States National Museum, in a letter dated September 9, 1932, wrote as follows: "Cube is extensively grown under the name 'barbasco' in the upper Amazon country around Iquitos. There are occasional plantings of it in the middle and lower Amazon districts where it usually is called 'Timbo'."

J. W. Ives, Assistant Trade Commissioner, Rio de Janeiro, Brazil, in a report entitled "Insecticidal and Other Toxic Plants found in Brazil," dated April 30, 1934, to the Bureau of Foreign and Domestic Commerce,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United States Department of Commerce, uses "cube" and "timbo" as synonymous. The vulgar name of *Lonchocarpus nicou* is timbo in Brazil; conapi, pacai, cube in Peru; nicou, haiari in the Guianas. *Lonchocarpus densiflorus* Benth. is also known as haiari in the Guianas. *L. floribundus* Benth. is called Timbo-venenoso in Brazil and *L. urucu* Killip and Smith is called Timbourucu in Brazil.

Ed. McKee, American Vice Consul, Callao-Lima, Peru, in a report dated May 8, 1934, uses the title "Peruvian Exportation of Barbasco or Cube Root." Seil, Putt and Rusby, Analytical and Consulting Chemists, of New York City, in a notice in a professional directory published in SOAP (vol. 10, No. 7, page 111, July, 1934), state that they are specialists in the analysis of pyrethrum flowers, derris root, barbasco *or cube root*,—their concentrates and finished preparations.

Cube as Lonchocarpus

Dennis, in United States patent reissue 18,667, issued November 22, 1932, applied for February 25, 1929, makes the following statement: "The invention consists of a compound obtained from the root or plant known in Peru as cube (sometimes spelled cubi) which is found in Peru and other South American countries. While the exact botanical classification of the plant is not altogether certain it is believed to be a species of the genus *Lonchocarpus* of the family Leguminosae."

Killip and Smith (Jour. Wash. Acad. Sci. 20 (5): 74-81. 1930), make the following statement: "On a trip of botanical exploration which we have just made into the interior of Peru and across Amazonian Brazil in the interest of the Smithsonian Institution and the New York Botanical Garden we saw thousands of plants of 'cube' in cultivation on plantations, and in a wild state in the dense forest occasional plants that appear to be nearly or quite identical. The name cube was applied to it in the region about Huancayo and southward. Farther to the north in Peru the plant was referred to locally as 'conapi' or 'pacai,' the most commonly used names, however, being 'barbasco legitimo' or simply 'barbasco,' which is the general name given to fish poisons in Spanish America. In Brazil the word 'timbo' is used for fish poisons in general, the 'barbasco legitimo' of Peru becoming 'timbo legitimo.' In British Guiana cube and other fish poisons are known as 'haiari': in French Guiana the word 'nicou' is similarly employed.

"We found that although several kinds of plants were used as fish poisons, such as *Cracca toxicaria*, *Cracca nitens*, and one or more species of *Clibadium*, and in Brazil, certain species of *Lonchocarpus*, one plant alone (cube) was most commonly cultivated and almost everywhere was said to be the most powerful."

"From the vegetative characters it seems clear that the plant in question is *Lonchocarpus nicou* (Aubl.) DC., described by Aublet in 1775 as *Robinia nicou* from a plant cultivated in French Guiana." . . . "Aublet states, moreover, that his plant was used as a fish poison under the name 'nicou'."

Summary

From the above review of the opinion of experts it is evident that "cube" is a word used by the natives of Peru to designate any plant having fish-poisoning properties but that the species regarded as most powerful and the one most commonly cultivated is *Lonchocarpus nicou* (Aubl.) DC.

This same species is called timbo in Brazil, nekoe in Dutch Guiana, nicou in French Guiana, haiari in British Guiana, and barbasco in those parts of Spanish America where it grows. The terms timbo and barbasco are also applied to many other fish-poisoning plants and the terms nekoe and haiari are also applied to *Lonchocarpus* species other than *nicou*.

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In an examination of derris resin, obtained by extraction of derris root with organic solvents, only two constituents were isolated. These were rotenone and a dimorphic substance melting at 189 and 192-4° C. It probably has the formula $C_{23}H_{22}O_7$. It has insecticidal properties. Published data on the relative toxicities of rotenone, dequelin, tephrosin, and toxicarol are inapplicable to assessment of the toxicity of derris resin, as the last three compounds do not occur as such or, at most, in very small amounts, in derris resins. The conclusion that the value of a derris root or resin can only be assessed by its rotenone content, is quite unjustified. R. S. Cahn and J. J. Boam. *J. Soc. Chem. Ind.* **54**, 42T-45T (1935).

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Three-in-One Oil Co., New York, is placing an extensive national advertising campaign behind its new product, "Three-in-One" furniture polish. Publication with a total circulation of 35,000,000 are being used, and the campaign is being backed up by sampling, window and counter displays, etc. The product is available in three sized bottles.

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Lambert Pharmacal Co., St. Louis, has scheduled an advertising campaign in 114 newspapers during April, May and June, to push the sale of a combination offer of "Listerine" shaving cream and "Styptic" cotton. An ordinary 25c tube of cream and 10c packet of cotton are being offered together for 25c.

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Lehn & Fink Products Co., Bloomfield, N. J., reports net profit of $747,618 for 1934, equal to $1.87 per share on 400,000 shares of common stock outstanding.

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The team representing McCormick & Co. in the Baltimore Drug Trade Bowling League ended the season in first place in league standing with 22 wins and only 8 losses.

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Johnson Laboratory, 363 Seventh Ave., New York, is introducing a new antiseptic and germicide under the name, "O-Three". The product is said to be prepared by saturating pure olive oil with ozone.

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Determination of Rotenone

A STUDY of rotenone determination has been reported by R. S. Cahn and J. J. Boam in *J. Soc. Chem. Ind.* 54, 37T-42T (1935). Jones' carbon tetrachloride method of determining rotenone (*Ind. Eng. Chem. Anal Ed.* 5, 23, 1933) gives results which are low if the rotenone content of the resin, isolated or in the root, is below about 17 per cent. The method is seriously in error if the rotenone content of the resin is below 10 per cent, and it fails completely for resins of very low rotenone content. A resin may contain up to 15 per cent of rotenone, i.e. 2.4 per cent in the root, and yet give no rotenone by the standard method of determination. The rotenone-carbon tetrachloride crystals which separate in the determination of rotenone are at most 90-95 per cent, and probably only 80-90 per cent pure.

A practical method which takes these considerations into account is as follows: Derris root should pass entirely through a 50-mesh sieve before it is sampled. Root, as ordinarily ground, frequently contains a proportion of coarse, spike-like material, through which the powder tends to filter, leaving an undue amount of coarse particles at the top. When the amount of coarse material is considerable, the whole batch should be sieved through a 50-mesh sieve, and the sample taken from proportionate amounts of the fine and coarse material.

The root should be dried prior to extraction in a vacuum desiccator until it contains not more than 5 per cent of residual moisture. The presence of much water slows down the rate of extraction of resin and also causes development of acidity in chlorinated solvents. This in turn causes decomposition of the extracted material and often rupture of the Soxhlet thimble. Drying at 100° C. causes decomposition of the resin and low results for rotenone content. A quantity of root sufficient to give 5-10 grams of extract is extracted in a Soxhlet for 8 hours with trichloroethylene which is vigorously boiled. The solvent is then changed and extraction continued for a further 4 hours. If the second solution acquires more than a very pale yellow color, extraction is repeated with a fresh batch of solvent for a further 4 hours. The united extracts are filtered, if necessary, and evaporated until the extract becomes thick and begins to bubble. A gentle current of air is then blown into the flask, which is rotated over a free flame, until the odor of solvent is replaced by the typical odor of hot derris resin. At this point the flask may be weighed to determine the approximate amount of resin.

The resin is then rapidly dissolved in 2 parts of warm carbon tetrachloride which has been saturated with rotenone in the cold, cooled, seeded if necessary, and kept overnight. The separated crystals are collected on a disc of ordinary filter paper in a Gooch crucible and washed with carbon tetrachloride saturated with rotenone, until the filtrate is nearly colorless. Dry to constant weight in air below 50° C. The weight of the complex times 0.72 gives the weight of rotenone.

Although this procedure sounds unreliable, it is the readiest method of removing all the tenaciously retained trichloroethylene, which is essential for accurate results. The actual point at which to cease evaporation is readily recognized, and after a very little practice the results obtained are more closely reproducible than those by any other method. The total extract is determined by evaporation of the trichloroethylene solution to dryness and heating to constant weight in an oven at 100° C.

To recover rotenone from the complex, one part of the complex is triturated with 5 parts of alcohol which has been saturated with rotenone. It is kept overnight. The rotenone is then collected in a Gooch crucible, washed with alcohol saturated with rotenone, and dried at 100° C.

To detect "hidden" rotenone in a resin poor in rotenone, one gram of rotenone and four grams of the resin are dissolved in 10 cc. of carbon tetrachloride which has been saturated with rotenone in the cold. The solution is kept overnight and then treated as in a normal rotenone determination.

The demand for foreign metal polishes in Egypt is comparatively limited, as polishes are consumed principally by European residents. Competition is reported to be keen, and domestic brands of metal polishes are sold at approximately 2½ cents per kilo. Imports of metal polishes into Egypt for the first 7 months of 1934 totaled approximately $29,000. With the exception of a comparatively few branches of foreign firms established in Egypt, sales of metal polish are carried on chiefly through the medium of local agents acting on a commission basis, though a few also buy on their own account. These agents invariably operate on an exclusive basis. Most firms have offices in Alexandria or Cairo, and usually maintain showrooms in both cities.

Merck & Co., Rahway, N. J., earned net profit of $1,030,643 during 1934. George W. Merck, president of the company, stated in his annual report that the number of employees of the company has increased by about 28 per cent since March, 1933.

Officers of Hercules Powder Co. were re-elected at the recent annual meeting presided over by R. H. Dunham, president. The regular quarterly dividend on the 7 per cent preferred stock was declared, and will be paid May 15 to stockholders of record May 3.

Leonard Hill, Ltd., London, England, publisher of *The Manufacturing Chemist*, moved March 25 to 17 Stratford Place, W. 1., London.

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Analysis of Pyrethrum Products

ALTHOUGH considerable work has been done on the analysis of pyrethrum extracts, some of it involves errors due to lack of knowledge of constituents present in pyrethrum flowers which may be extracted with volatile solvents. An extensive study of pyrethrum has been made by Jean Ripert of the French branch of Rex Research, owners of "Fly-Tox," and a method of analysis evolved. Previous methods are discussed and sources of error pointed out.

The chemical nature of pyrethrum flowers varies considerably during the course of their development. Therefore it is necessary to state at what stage of development the flowers were collected in reporting accurate quantitative studies. Important quantities of free pyrethric acids exist in the flowers. The presence of both saturated and unsaturated fatty acids, free and combined, was demonstrated. The presence of such fatty acids seriously modifies analytical results obtained by methods based on the properties of pyrethric acids or on those of pyrethrolone. The new method developed may be applied to all products containing pyrethrum. It permits determination of pyrethrin I and pyrethrin II. It found that in the plant the content of pyrethrum I equals that of pyrethrin II. The presence of the ester, methyl pyrethrolone, was confirmed.

The choice of solvent for extracting the flowers is very important. Unsaturated fatty acids may change to oxy-acids during storage, particularly when the flowers have not been baled in a hydraulic press. The presence of the oxy-acids prevents complete extraction of the pyrethrins by petroleum ether.

The principle of the method of analysis depends on the fact that the barium salts of pyrethric acids are soluble in water. Pyrethrin I and II are determined separately and with high accuracy because of the elimination of errors due to fatty acids. Pyrethrum extract is saponified by a normal solution of potassium hydroxide in methyl alcohol. The alcohol is expelled on a water bath under vacuum and the residue taken up in water. This solution is saturated with salt, barium chloride added, and the mixture filtered to separate barium salts of fatty acids. The filtrate contains sodium salts of pyrethric acids.

The sodium salts so obtained are decomposed by means of hydrochloric acid. Pyrethric acids are then extracted with ethyl ether, and the extract washed with salt water to free it from all hydrochloric acid. The ether is evaporated and pyrethric acids titrated in the presence of alcohol with 0.2 *N* alcoholic potassium hydroxide. The solution is made acid again with an excess of *N* sulfuric acid. The flask is attached to a distilling apparatus and acids volatile with steam distilled over. The distillate is extracted with petroleum ether, the extract washed with sal solution and titrated with 0.2 *N* alcoholic potassium hydroxide. This gives the value for pyrethrin I.

The aqueous distillate left after petroleum ether extraction is titrated to give the value for lower molecular weight fatty acids which were not precipitated with barium. This value, plus the value for pyrethrin I is subtracted from the value obtained by titration before distillation, to give the amount of pyrethrin II.

The method was applied to various commercial pyrethrum extracts and products, with an error in the results of the order of 1 to 2 per cent. *Bull. Annales Falsifications et Frauds*, No. 312, 29 pp.

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Sodium lauryl sulfate (Gardinol W A), sulfated oleic acids (Igepon) and sulfated phenyl compounds (Arescap, Aresket) were tested as to their possible value as spreading and wetting agents with contact insecticides. The results indicate that these chemicals spread on waxy foliage in high dilutions, possess a substantial margin of safety in toxicity to foliage, possess valuable emulsifying properties, and are compatible with hard water. The Igepons are less efficient as wetting agents on plants than the other two types. J. M. Ginsberg. *J. Econ. Entom.* **28**, 224-8 (1935).

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American Cyanamid & Chemical Corporation announced recently that, in line with the new general practice in the Chemical Industry, the New York offices at 30 Rockefeller Plaza, will be operated on Saturdays with a skeleton force only, for the handling of emergency orders. This plan will become operative on Saturday, June 1st and extend to Saturday, September 28th inclusive.

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Pearson's Antiseptic Co., London, England, is establishing a branch plant in Lachine, Que., Canada for the manufacture of disinfectants, insecticides, liquid soaps, and other allied products.

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Magic Manufacturing Co., Charleston, W. Va., has started production of a bleaching compound under the "Magic" trademark.

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SEATTLE, WASH. • PROVO, UTAH • MINNEAPOLIS, MINN. • CHICAGO, ILL. • GRANITE CITY, ILL. • INDIANAPOLIS, IND. • DOVER, OHIO • FAIRMONT, W. VA. • NEWARK, N. J. • NORFOLK, VA. • CHATTANOOGA, TENN. • MOBILE, ALA.

IS not an objectionable odor the greatest single drawback today in the sale of liquid household insecticides?

You overcome sales resistance when you eliminate bad odor and the indication of vermin, . . . and for this we offer you

"NODOR"

NODOR is water white, non-staining, and quick evaporating, and of the correct density for the most effective use in insecticide sprays. NODOR is a fully

Deodorized Kerosene

Write for samples and full information to

O'CONNOR & KREMP

Sole Agents

11 West 42nd Street

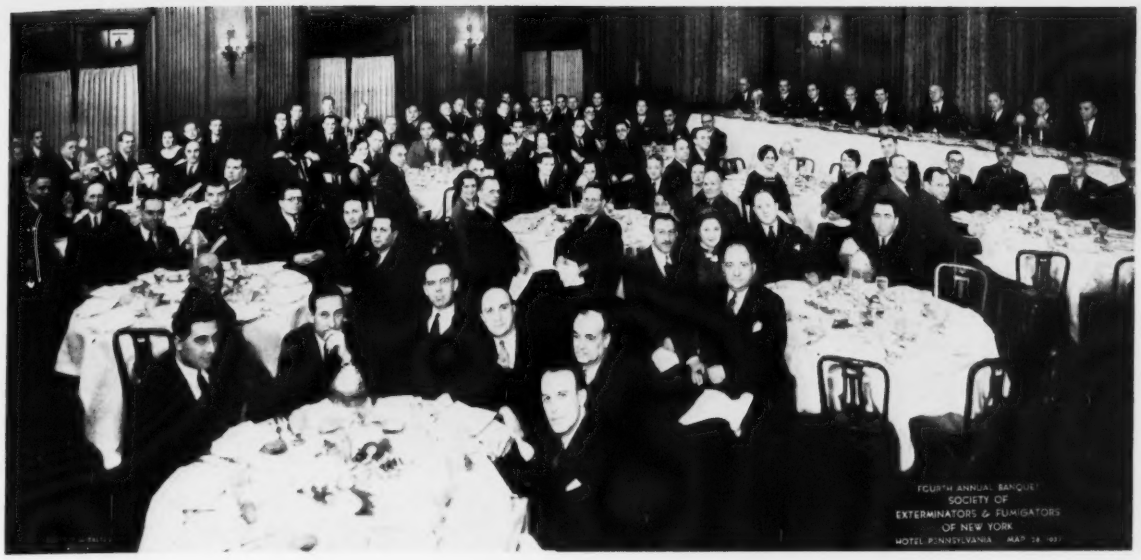
New York

Manufactured by

BRADFORD PENN REFINING CORP.

Deodorized Petroleum Products

Clarendon, Penna.



Worth Laboratories, 9212 Bishop Road, Detroit, has been organized by Marvin O. Worth and William F. Blank to manufacture an insecticide, "Wirofect".

MOVE TO RECOMMIT COPELAND BILL

FOUR new laws have been added to the current crop of legislative measures affecting disinfectants, antiseptics, germicides, insecticides, etc., according to bulletins issued over the past month by John Wright, secretary, National Association of Insecticide & Disinfectant Manufacturers. The four bills referred to are all State measures. The Copeland Bill, which is giving greatest concern to manufacturers throughout the country, has not yet passed the Senate, and faces an uncertain future. Senator Clark of Missouri has announced his intention of moving to recommit the bill, and if this course is followed the whole bill would again be opened up to further changes.

In this connection, Mr. Wright urges all manufacturers of products affected to wire their Senators approving the proposal of Senator Clark to recommit. He mentions specifically that there are still two paragraphs (j) and (k) in section 402 of the bill which are very objectionable. These paragraphs would give to the Department of Agriculture power to prescribe a method of testing for antiseptics, germicides, disinfectants, and bactericides, exposing manufacturers of these products to the threat of constantly changing departmental regulations, and seizure of their goods if they did not comply with the Department's prescribed tests. It is the position of Dr. Wright's committee that the method of testing should be fixed by law, and that the industry should be protected from the possibility of seizure of property except on the basis of a clearly defined law. In their opinion paragraphs (j) and (k) should be entirely deleted from the bill. The four bills referred to above which have been passed, and are now law, include two in New York State, one in South Dakota and one in Washington.

N. Y. EXTERMINATORS ELECT SHRIMPLIN

William Shrimplin, Rose Rat Exterminating Co., was elected president of the New York Society of Exterminators and Fumigators at the annual meeting of the organization held at the Hotel Pennsylvania, New York, March 28. Sidney Apfelbaum, General Exterminating Co., was named vice-president; Irving H. Josephson, Josephson Disinfecting Co., was re-elected secretary; Frank J. Rauch, Empire Exterminating Co., was re-elected treasurer, and Nathan K. Concannon continues as executive secretary. The only other change in the official list was the addition of Samuel S. Rosen, Guarantee Exterminating Co., to the board of directors. The meeting was followed in the evening by the fourth annual dinner, with more than 125 members and guests of the society in attendance. The retiring president, William O. Buettner, Oscar G. Buettner & Son, presided at the speakers' table, and was the recipient of a handsome gift from the membership on the occasion of his retirement from office. Guests at the dinner, all of whom made short talks, included Dr. E. E. Free, New York University; Dr. E. D. Bocker, Chief, Drug Division, New York Dept. of Health; Dr. John Oberwager, Sanitary Superintendent, New York City Dept. of Health, and Ernest M. Mills, U. S. Biological Survey, U. S. Dept. of Agriculture.

NEW INSECTICIDE BOOKLET

"Our Modern Insecticide" is the title of a new 32 page booklet on the liquid household insecticide, designed for distribution to the consumer. It tells the story of pyrethrum and its purpose in a liquid insecticide, describes the common household insects and the method of controlling them, and also tells about the purpose and use of cattle sprays. It is profusely illustrated. Although the booklet carries no names, or mention of individual brands, it was prepared by John Powell & Co., New York, and is copyrighted by them. Copies are being sold at cost to the trade for distribution to consumers.

For Permanent Advertising—

THIS PRACTICAL SWIVEL-SPOUT POR-PAIL

Here is the ideal container for liquids. It has been adopted as standard by many leading manufacturers because it is safe for shipping and efficient in use.

The new Swivel-Spout pours accurately—even into a test-tube—or it will drain the contents quickly.

Your sales message lithographed in colors right on the container means PERMANENT ADVERTISING, because the "secondary-utility" of this pail keeps it in use and your message on display long after the original contents are used.

Write for samples and prices.

WILSON BENNETT MFG. COMPANY

GENERAL FACTORY AND OFFICES: 6528 So. Menard Ave., CHICAGO

Phone Republic 0200

Eastern Factory and Office
353 Danforth Ave.
Jersey City, N. J.
Phones: Delaware 3-4700
Corlant 7-0231

Southern Factory and Office
Cortez and Bienville Sts.
New Orleans, La.
Phone Galvez 2171

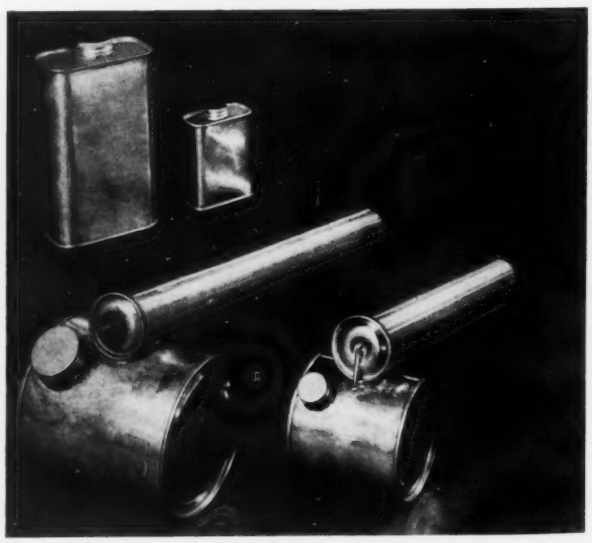
SALES OFFICES AND WAREHOUSES IN PRINCIPAL CITIES

VOGEL *Sprayers and Cans*

A COMPLETE line of regular hand and continuous sprayers for the insecticide trade for the 1935 season . . . backed by VOGEL'S 40 years of sprayer manufacture . . . standard items or individual specifications . . . any quantity or design . . . plain or lithographed . . . made right and priced right. . . .

VOGEL metal cans from 2 oz. size up for insecticides, disinfectants, floor waxes, polishes, etc. . . . any shape, any style . . . a dozen to a million . . . plain or decorated.

For sprayers or cans, . . . ask VOGEL!



WILLIAM VOGEL & BROS., Inc.

41 SOUTH NINTH ST. *Established 1867* BROOKLYN, N. Y.

Charles P. McCormick, president of McCormick & Co., Baltimore, and president of the National Association of Insecticide and Disinfectant Manufacturers, was the author of an article on the cultivation of the junior executive in the March issue of *Executives Service Bulletin*, published by the Metropolitan Life Insurance Co. Mr. McCormick has attracted country-wide attention with his Junior Board of Directors, made up of younger executives of the company, and represented by a member of the regular board of the firm.

Rochester Germicide Co., Rochester, N. Y., announces that J. L. Lamprey, who formerly owned and operated the Schaaf Janitor Supply Co., St. Paul, Minn., and the Lamprey Products Co., has been appointed manager of the St. Paul branch of Rochester Germicide at 592 N. Snelling Ave. Mr. Lamprey has discontinued the other enterprises. Rochester Germicide also announces that Walter G. Novesky, formerly manager of the St. Paul branch, is now in charge of the Chicago office at 548 W. Lake St.

W. B. Eddy, general manager of the Rochester Germicide Co., Rochester, N. Y., and a member and secretary of the Code Authority of the Insecticide and Disinfectant Manufacturing Industry, resigned on April 9, joining Dr. Robert C. White, W. G. Griesemer, and Wallace Thomas, who previously had tendered their resignations. The resignation of Mr. Eddy takes out the last officer of the Code Authority, the others having resigned previously.

W. B. Eddy

I. E. La Rue, has joined the New York City sales force of S. B. Penick & Company. Mr. La Rue, who is well known in the drug, pharmaceutical and allied fields, will primarily represent the national gum department of S. B. Penick & Company.

Vestal Chemical Company, St. Louis, has appointed Shaffer Brennan Advertising Company, of that city, to handle all of its advertising on "Wax-Rite", a self-polishing floor wax. Newspaper copy will be used in a number of cities throughout the months of April and May. Radio may also be used.

Stanton C. Kelton, secretary of the Rohm & Haas Co., Philadelphia, has been elected a member of the Board of Governors of the National Association of Insecticide & Disinfectant Manufacturers to succeed the late Dr. Charles H. Peet of the same company.

"Chroma", a new cleaner and polish for chromium, is being made by the D & R Mfg. Co., Niagara Falls, N. Y.

FOUR RESIGN FROM CODE AUTHORITY

Dr. Robert C. White of the Robert C. White Co., Philadelphia, chairman of the Code Authority for the Insecticide and Disinfectant Manufacturing Industry, resigned from the Code Authority late in March. His resignation was followed closely by that of W. G. Griesemer of the Black Flag Co., Baltimore, treasurer of the Code Authority Wallace Thomas of the Gulf Refining Co., Pittsburgh, had resigned as a member preceding the resignation of Dr. White. The only remaining officer of the Code Authority was W. B. Eddy of the Rochester Germicide Co., Rochester, N. Y., secretary.* Attempts on the part of Mr. Eddy to obtain instructions from the NRA as to the next move of the Code Authority, met with no response. The remaining members of the Code Authority in addition to Mr. Eddy are H. A. Brererton of Germo Manufacturing Co., St. Louis; J. L. Brenn of the Huntington Laboratories, Huntington, Ind.; H. M. Clark of Dr. Hess & Clark, Inc., Ashland, O.; E. C. Bolte of Michel & Pelton Co., Oakland, Calif.; W. J. Zick of Stanco, Inc., New York.

Dr. Robert C. White

W. G. Griesemer

Wallace Thomas

In resigning, Dr. White stated: "In my thirty years of business experience, I feel that my association with the entire NRA has been the greatest fiasco, from a business man's viewpoint, in which I have ever indulged . . . . From the earliest inception we were placed in a false position by advocating to those in our industry the great benefits which would be derived from the NRA as represented to us by that body . . . . Any element of confidence which I had previously had in the NRA has been entirely dissipated, and it is not my intention to continue with a movement which in my opinion is doomed to dismal falure."

* The resignation of W. B. Eddy, Rochester Germicide Co., secretary of the Code Authority, as a member and secretary, was filed with the NRA on April 9.

A new type of

PYRETHRUM EXTRACT

... odorless and stabilized!*

The new Hammond deodorized and stabilized Pyrethrum Extracts are now offered to manufacturers of fly sprays and other liquid insecticides . . . in two concentrations . . . 20 to 1, or 20 lbs. of pyrethrum per gallon . . . and also 5 to 1 . . . made complete in our plant with newly installed, modern extracting equipment from pyrethrum flowers imported by us from Japan . . . in a deodorized petroleum base . . . stabilized* against deterioration . . . standardized for strength . . . at prices competitive with ordinary extracts.

We are also in a position to supply manufacturers with granulated pyrethrum flowers for percolation, — likewise rotenone extracts and various rotenone-pyrethrum concentrates.

Write us for samples, prices, and further information

Hammond Paint & Chemical Co.

Quality Products Since 1875

Beacon, N. Y.

*Trade Mark Reg. Pat. Applied For.

CRESYLIC ACID

AROMATICS

PHENYL ETHYL ALCOHOL
GERANIOL
CITRONELLOL
ACETOPHENONE
BENZYL ACETATE
BENZYL ALCOHOL
BENZOPHENONE
AMYL CINNAMICALDEHYDE

For Soaps, Perfumes, Cosmetics, etc.

ASSOCIATED COMPANIES

KAY-FRIES CHEMICALS, INC. NEW YORK, N. Y.
CHARLES TENNANT & CO. (CANADA) LTD. TORONTO, CANADA

AMERICAN-BRITISH
CHEMICAL SUPPLIES, Inc.
180 MADISON AVE., NEW YORK

NEW PATENTS

(*From Page 45*)

No. 1,990,422, Insecticide. Patented February 5, 1935 by Robert C. White, Philadelphia, Pa. A composition of matter comprising pyrethrum extract and "Thioquinozole".

Reissue **No. 19,456,** Powdered Soap of Low Moisture Content. Patented February 12, 1934 by Benjamin Clayton, Sugarland, Tex., and Walter B. Kerrick, Los Angeles, and Henry M. Stadt, Glendale, Calif., assignors, by direct and mesne assignments, to Refining, Inc., Reno, Nev. A continuous process for producing soap which comprises the steps of introducing saponifiable and saponifying materials, under pressure, into a reaction zone, applying sufficient heat and pressure to the materials to produce a relatively high temperature, highly in excess of the boiling point of water at atmospheric pressure, while continuously maintaining a substantial super-atmospheric pressure on the material so as to rapidly and substantially uniformly saponify the same, during their passage therethrough, continuously discharging the thus uniformly saponified material from the reaction zone by the pressure maintained therein and introducing the same in their heated condition into an evaporating chamber and maintaining the temperature and pressure conditions therein sufficient to evaporate the vaporizable constituents from the reaction zone in the evaporating zone thereby to produce a soap consisting predominantly of saponified material.

No. 1,991,501, Shaving Preparation. Patented February 19, 1935 by George D. Gettemuller, Bridgeton, N. J., and Samuel L. Goldheim, Baltimore, Md. A neutral shaving preparation of a latherless type which consists of a mixture of the following ingredients in substantially the proportion stated, stearic acid 11 grams, lanolin 10 grams, coconut oil 0.3 gram, concentrated ammonium hydroxide 1.35 grams, paraffin wax 6 grams, spermaceti wax 2 grams, boric acid 1.5 grams, water 75 grams, and having a trace each of menthol, camphor and perfume.

No. 1,991,590, Germicide. Patented February 19, 1935 by Wallace J. Yates, Martinez, Calif., assignor to Shell Development Company, San Francisco, Calif. A germicide containing as its active ingredient an acidic oily liquid separated from an Edeleanu extract of a mineral oil, from which extract substantially all sulfur dioxide was distilled off, by subjecting the extract to a neutralizing treatment with an aqueous alkali solution, separating the spent aqueous solution from the neutral extract, and adding a quantity of mineral to the acid solution to cause the separation of the oily liquid from the aqueous solution.

No. 1,992,045, Metal Cleaning and Rust Preventing Solution. Patented February 19, 1935 by William K. Schweitzer, East Cleveland, Ohio, assignor to The Grasselli Chemical Company, Cleveland, Ohio. A metal cleaning and rust preventing solution comprising aqueous phosphoric acid and a sulfonated glycerid of a high molecular fatty acid.

WHY YOU CAN BE SURE *with* COAL TAR PRODUCTS FROM KOPPERS

1. KOPPERS IS ONE OF THE TWO LARGEST PRODUCERS OF COAL IN THE UNITED STATES
This has given Koppers a thorough knowledge of the coals from which tar products are produced.

2. KOPPERS BUILT OVER 75% OF ALL THE BY-PRODUCT OVENS IN THE UNITED STATES
This has made Koppers more familiar than any other organization with the processes of tar production.

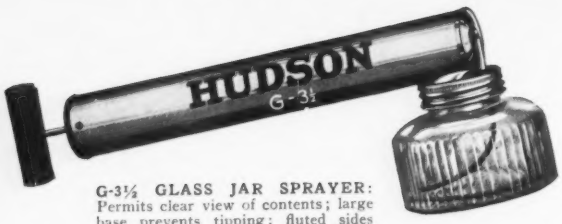
3. KOPPERS IS ONE OF THE THREE LARGEST PRODUCERS OF CRUDE TAR IN THE UNITED STATES
This has kept it in intimate daily contact with the practical side of the production of coal tars and their products.

DEPEND ON KOPPERS FOR COAL TAR PRODUCTS

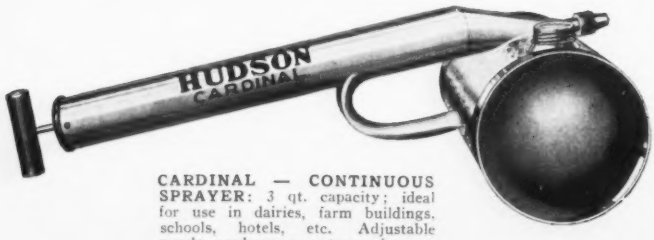
TAR ACIDS
CRESOL, U. S. P.
PHENOLS
CRESYLIC ACID
98% to 100% STRAW COLOR
TAR ACID OILS
NEUTRAL HYDROCARBON OIL

KOPPERS PRODUCTS COMPANY
KOPPERS BUILDING
PITTSBURGH, PA.

HUDSON SPRAYERS



G-3¼ GLASS JAR SPRAYER: Permits clear view of contents; large base prevents tipping; fluted sides add strength and appearance. Large opening for easy filling, emptying or cleaning.



CARDINAL — CONTINUOUS SPRAYER: 3 qt. capacity; ideal for use in dairies, farm buildings, schools, hotels, etc. Adjustable nozzle produces any type of spray from finest fog to solid stream.

Make your customers use it right!

The best insecticide can't get results unless it's properly applied. Insure your customers' satisfaction by furnishing Hudson Sprayers.

Hudson Sprayers make it easier to get full effectiveness because they produce that fine penetrating spray that combines economy of material with greater killing power. They make a *good* insecticide *better*.

The complete Hudson line includes small household types as well as larger continuous sprayers for commercial work.

Our experts will gladly study your requirements to select the type of sprayer that will get the best results with your product.

Write us today

H. D. HUDSON MANUFACTURING COMPANY
589 E. ILLINOIS STREET :: CHICAGO, ILLINOIS

DERRIS INC.

PRESENT

"SERRID" STABILIZED DERRIS POWDER

WITH A PROVEN INCREASE IN EFFICIENCY OF

35 TO 90 PERCENT

PARTICULARS ON APPLICATION TO

DERRIS INC. 79 WALL ST. NEW YORK, N. Y.

FLOOR DERRIS AND PYRETHRUM POWDERS

(From Page 89)

crease in the efficiency of the treated dust over the untreated dust of 93.5% in dead worms.

The comparison of greatest value is as between the dead and missing worms in each treatment. Derris dust 5D showed an increase in dead and missing worms of 28% (from 62% to 90%). By direct comparison this gives an increase in the efficiency of the 5D derris dust of 45% over the untreated dust. The next best derris dust 1DD gave an increase in efficiency of 42% and the poorest treated derris dust 1D gave an increase in efficiency of 34%.

Tests with pyrethrum powder similar to those just reported on derris dusts were also conducted and observations made on the same plan. The periods of observations ranged from 1 to 6 days after dusting with an average of a little more than 3 days. The pyrethrum powder lost its toxicity more rapidly than did the derris powder, therefore, the tests were not extended for as long a time. An average of all the tests show the following per cent dead worms and dead and missing worms.

Tests with Pyrethrum Dusts on Cabbage Worms

Materials	*% Dead Worms*	*% Missing Worms*	*% Dead and Missing Worms*
Check, no dust	0.5	0	0.5
Pyrethrum, not treated	10.0	33.5	43.5
Pyrethrum 1P	41.5	29.9	71.4
Pyrethrum 2P	20.1	49.1	59.2
Pyrethrum 3P	33.2	26.4	59.6
Pyrethrum 4P	30.2	32.3	62.5

These data show that comparing the per cent of dead worms pyrethrum dust 1P was more than 4 times as effective as the unprotected pyrethrum powder (an increase from 10% dead worms to 41.5% dead worms). The poorest of the treated pyrethrum dusts was twice as effective in the number of dead worms found as the untreated pyrethrum powder.

Probably the comparison of the greatest value is as between the total per cent dead and missing worms in the different treatments. The untreated pyrethrum powder gave 43.5 per cent dead and missing worms as compared to 71.4 per cent for pyrethrum powder 1P. This is an increase in the per cent dead worms of 27.9 per cent or by direct comparison an increase in the efficiency of the treated dust of 64 per cent over the untreated dust. The treated dust giving the poorest results gave an increase in efficiency of 37 per cent over the untreated dust.

Summary and Conclusion

1. That pyrethrum powder loses most of its toxicity when exposed to the action of air and sunlight in the summer time within a few days.

2. That derris powder requires at least twice as long as pyrethrum to lose most of its toxicity when exposed to the action of air and sunlight in the summer time.

3. That the rapidity of the loss of toxicity in pyre-

FLIES CALL IT

Public Enemy No. 1

When ATLANTIC ULTRASENE is your fly-spray carrier

ULTRASENE is a petroleum product, recently developed for use as an insecticide base. It makes *more effective* fly-sprays, because of its uniformity and rapid evaporation. Ultrasene has no kerosene odor and leaves no oily residue — *all* good selling-points for your product. In color, Ultrasene is brilliant water-white. Its flash-point is high.

Test Atlantic Ultrasene. Many fly-spray manufacturers have found it a solution to their problems, and are using it with marked success. We will be glad to send you an experimental sample and further information upon request. The Atlantic Refining Company, Specialty Sales Department, 260 South Broad Street, Philadelphia, Pa.

ATLANTIC ULTRASENE

★

SPECIALTY SOAPS

LIQUID SOAP BASE

Coco Oil—60%—Natural, Opal, Green

LIQUID SOAPS

Coconut ..... 10% to 45%
Olive Oil ..... 10% to 30%
Colored and Perfumed

SCRUBBING SOAPS

Pine, Sassafras, Plain

LIQUID SHAMPOOS

Coconut Oil .. 30% to 45%
Olive Oil 30%
Castile 30%

POWDERED and GRANULATED SOAPS

Castile, U. S. P.
Coco Castile 50-50
Pure Coconut

SOFT POTASH SOAPS

Light and Dark
U. S. P. 9th and 10th

PHONE CUMBERLAND 6-2800

KRANICH SOAP CO.

54-60 RICHARDS ST. BROOKLYN, N.Y.

AGAIN Breuer Leads the Way
In Quality Electric Sprayers
With the New TORNADO MODEL 36

Automatic Time Switch—Volume Air Control
On Gallon Capacity
1-3 H.P. G. E. Universal Motor

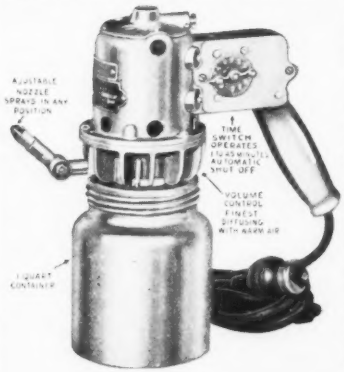
1/3 H.P. G.E. MOTOR
TIME SWITCH OPERATES 1 TO 45 MINUTES AUTOMATIC SHUT OFF
ADJUSTABLE NOZZLE SPRAYS IN ANY POSITION
VOLUME CONTROL FINEST DIFFUSING WITH WARM AIR
COMPRESSOR TYPE
1 GALLON CONTAINER

Here is the finest sprayer ever built. Similar to the now widely used Tornado Model 54 and retaining the automatic time switch, volume air control and adjustable nozzle features, the new Model 36 will spray a big volume of insecticide great distances in finest gas formation.

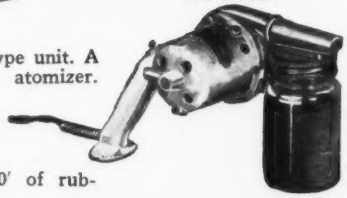
The patented principle of heating and compressing material does the trick. Just the sprayer you need for covering large distances and penetrating with the finest gas every possible source of insect existence.

Get the facts on this sprayer before buying!

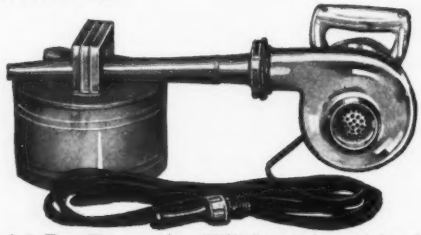
Also most complete line of electric sprayers to meet every spraying problem.


ADJUSTABLE NOZZLE SPRAYS IN ANY POSITION
TIME SWITCH OPERATES 1 TO 45 MINUTES AUTOMATIC SHUT OFF
VOLUME CONTROL FINEST DIFFUSING WITH WARM AIR
1 QUART CONTAINER

MODEL 54—
1 QT. CAPACITY
It features an automatic time switch set at any point from 1 to 45 minutes—sprays desired amount without any attention whatever — automatically shuts off. Can also be used for hand spraying. Adjustable nozzle can be set for spraying in any position. Also exclusive volume control adjustment permits spraying one ounce every two to four minutes with either fine or heavy spray. MODEL 53 same as Model 54 except does not have automatic time switch or adjustable nozzle.



Model 50 Fan Type unit. A fine insecticide atomizer. Sprays distance of 8′ to 10′. ⅛ H.P. G.E. Universal Motor, 1 pint glass jar. 20′ of rubber covered cable.



Model 6 Fan Type unit. Will break insecticide into a very fine mist. Sprays 18′ to 20′. 1/3 H.P. G.E. Universal Motor. Norma Ball Bearings, 1 gallon metal container. This model is for larger institutions, warehouses, industrials, etc., and is also highly recommended for moth-proofing solutions. Write today for complete description and circulars.

BREUER ELECTRIC MFC. CO.
862 Blackhawk Street **Chicago, Ill.**

We do not sell insecticides. Our business is manufacturing sprayers.
Patented in U.S.A. and Foreign Countries

thrum powder and in derris powder is largely directly dependent upon the intensity and duration of the light.

4. That pyrethrum powder loses its toxicity when exposed to air in the absence of direct sunlight but much slower than when direct sunlight is present.

5. That derris powder loses its toxicity relatively much slower than pyrethrum powder when exposed to air in the absence of direct light.

6. That treated pyrethrum powder after exposure to light and air shows an efficiency from 30 to 65% greater than untreated pyrethrum similarly exposed.

7. That treated derris powder after exposure to light and air shows an efficiency from 34 to 93% greater than untreated derris powder similarly exposed.

The writers conclude from the data developed under the fellowship that the period of toxicity of the treated pyrethrum powder is prolonged by 30 to 60%, and of treated derris powder 35 to 90%.

SWEEPING COMPOUNDS

(From Page 93)

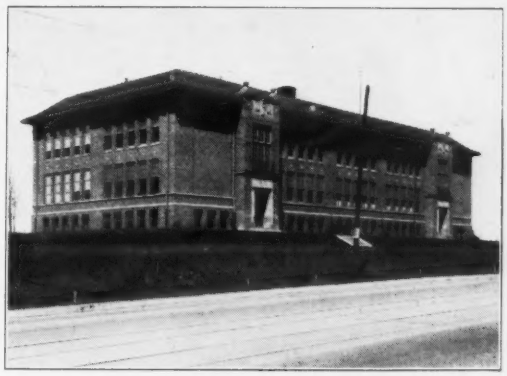
what he gets. The moisture content is usually the "nigger in the woodpile". The Government specification limit of 10 per cent should also be the commercial limit for water present.

It seems that if the manufacturers would undertake to push the sale of sweeping compounds with additional missionary work among the main consuming groups, both they and the sanitary product and janitor supply jobbers would benefit. From the angle of sanitation and disease prevention,—complete removal of dust, preventing germ-laden dust from flying about, bringing floors and dust into intimate contact with a disinfecting and deodorizing material (where pine oil is used), and keeping floors damp with a thin film of oil to take up the dust as it is formed and settles,—a much stronger sales drive might be worked out. As it is, sweeping compounds seem to be carried in stock to await buyers rather than pushed to market with the effort which is put behind other sanitary specialties. Perhaps if average prices were higher, more interest might be displayed in selling them.

Royal Manufacturing Co., Duquesne, Pa., has elected J. C. Ackerman a member of the board of directors. Mr. Ackerman is sales representative in the Pittsburgh area for the Warner Chemical Co., John Powell & Co., Innis Speiden & Co., L. Sonneborn Sons, Inc., and Monsanto Chemical Co.

A synthetic mineral beeswax is being manufactured by the Barnsdall Oil Company. It is offered as the first real substitute for natural beeswax. The product is white in color and has a melting point of 160° F.

Texas Corp. reports net profits of $5,545,205 in 1934, comparing with net loss of $491,004 in the previous year.



G. F. B. CONCENTRATED BASE COLORS

Reach a Vast Sales Field

Gym Finish Concentrated Base Colors are a revolutionary step forward. They are different and unique and when intermixed with Gym Finish make a product unequaled for beauty of finish and durability when used on cement, concrete, wood, metal, linoleum, wall and plaster boards and plaster surfaces.

The same features of durability, penetration, excellent covering, ease and economy in application of Gym Finish are retained plus the added advantage of a selection of colors. The Concentrated Base Colors are finely ground and when intermixed according to direction make a product far longer wearing than the usual cement and floor paints heretofore available.

APPLIED WITH A MOP

On large surfaces, application is simplified and economical because Gym Finish Colors can be applied with a mop. On certain types of surfaces they can be adjusted for brush application.

NOW A NEW AND BIGGER MARKET AWAITS YOU

The tremendous market for Gym Finish is now increased many fold with Concentrated Base Colors. A new and greatly enlarged opportunity for sales and profits.

Gym Finish Base Colors are a product of the Federal Varnish Company, world's largest producer of floor preservatives and finishes selling in bulk.

Cash in on this opportunity to expand your business. Write for prices and complete information.

Federal Varnish Company
337 South Peoria St., Chicago, Illinois

...how much for smell?

WHETHER it is an undesirable odor in your product which you want to cover,—or whether it is a pleasing fragrance which you desire to add,—whether it be in a

Liquid Insecticide
Para Product
Floor Wax
Cleaning Fluid
Polish
Shampoo

Vioflor

will cut your odor covering or perfuming cost.

VIOFLOR masks undesirable odors to such an extent that much smaller quantities of perfuming material are needed,—a saving of 40 to 50% in perfume cost.

VIOFLOR acts as a fixative for the perfuming agent, saving loss of odor value.

VIOFLOR permits the use of finer, higher priced perfumes at no increase in perfuming cost.

Send for a sample to test in your product.

Manufactured by
CREPIN & DOUMIN, LTD.
LONDON, ENGLAND

Sold in the United States and Canada by

John Powell & Co., Inc.

114 E. 32nd ST. **NEW YORK, N. Y.**

Yes Sir ...

DOBBINS
SUPERBILT SPRAYERS

will solve your spray problems!

Controlled Atomization and Volume
by a Simple Twist of the Wrist

NO. 30 1½-GALLON CAFACITY
NO. 35 3-QUART CAPACITY

High Pressure Chemical Sprayer with Air Regulator and Volume Control

The discharge has a wide range of adjustment, from a forceful, penetrating spray, to a medium mist, or a fine floating fog, with inbetween variations. All available at the will of the operator.

Test this sprayer out with your product, and you will find a solution to your spray problems. What the job needs you can give it with a Dobbins.

We Manufacture a Complete Line of Sprayers and Dusters. Write for Catalog No. 43.

DOBBINS MFG. CO.
NORTH ST. PAUL, MINN.

A Complete Line of Sprayers, Mop Wringers, Sanitary Chemical Closets and Metal Specialties.

The new Dethol all-purpose powdered household insecticide which has just been put on the market by the Dethol Manufacturing Co., Washington, D. C. Here is shown the counter display carton containing the regular three-quarter ounce size cans. Cans manufactured by Continental Can Co.

◆

Plan I. & D. Meeting Program

Preliminary plans for the 22d annual meeting of the National Association of Insecticide & Disinfectant Manufacturers to be held June 10 and 11 at the Edgewater Beach Hotel, Chicago, are being laid by the arrangements and program committees. The meeting will extend for two days with only five hours of business sessions each day. There will also be various group conferences. Subjects on the program this year will be confined chiefly to those of a commercial nature such as marketing, costs, credits, handling salesmen, etc. The program committee consists of H. W. Hamilton, White Tar Co., chairman; J. A. Walsh, of Rochester Germicide Co.; Percy Magnus, of Magnus, Mabee & Reynard, Inc., and R. P. Neptun, of Allaire, Woodward Co. John Powell, of John Powell & Co., is chairman of reception and arrangements.

◆

An insecticidal preparation consists of a mixture of rotenone, veratrine and a filler. Herbert Schotte and Karl Goernitz. Canadian Patent No. 348,379.

MORE ABOUT FLOOR WAXES

"How to Select and Judge a Water Emulsion Floor Wax," a feature article by Richards Jarden, president of the Franklin Research Co., Philadelphia . . . practical advice by a manufacturer . . . will be published in the next issue of *Soap.*

ONE UNIFORM QUALITY

ALWAYS

That's Why We're "Your Most Logical and Economical Source of Supply" For—

INSECTICIDES

HOUSEHOLD FLY SPRAYS
MOTH SPRAYS
PERFUMED INSECTICIDE
LIQUID INSECTICIDE
SPECIAL PHENOL INSECTICIDE
X Y Z INSECTICIDE
POULTRY LICE OIL
DARK AND LIGHT COLORED CATTLE SPRAYS
PINE CATTLE SPRAY
ETC.

CLEANING COMPOUNDS

PINOLAVE—MAGIC CLEANER
PINE SCRUB SOAP
METAL POLISH
LIQUID TOILET BOWL CLEANER
GARAGE FLOOR CLEANER
FLUSH KLEEN
DRAIN PIPE OPENER
LIQUID SOAPS
WATERLESS CLEANER
ETC.

DISINFECTANTS

COAL TAR DISINFECTANTS
PINE OIL DISINFECTANTS
PINE ODOR DEODORANTS
TECHNICAL CRESOL COMPOUND
IMPERIAL FORMALDEHYDE SPRAY
CHLORINE FORMALDEHYDE SPRAYS
ETC.

REQUEST FURTHER INFORMATION

THE CHEMICAL SUPPLY COMPANY

2450 CANAL ROAD
CLEVELAND, OHIO

"SINCE 1898"

MEMBER
NATIONAL ASSN. INSECTICIDE AND DISINFECTANT MFRS. INC. 1914 INC.

Eliminate Costly Plant Breakdowns by Installing

NEW or REBUILT SOAP MACHINERY

REBUILT SPECIALS!

H. A. SOAP MILL

This 4-roll granite toilet soap mill is in A-1 shape. Latest and largest size rolls.

CUTTING TABLES

2 Rebuilt Automatic Power Soap Cutting Tables. Fully guaranteed.

SOAP PLODDERS

Rebuilt Single Screw Soap Plodders with 6, 8, 10 or 12-inch screws are available for immediate shipment at very attractive prices.

AUTOMATIC PRESSES

4 Jones Automatic combination laundry and toilet soap presses complete and in perfect condition.

TOILET SOAP PRESS

One small size fully automatic Jones Toilet Soap Press in stock. Capacity 150 to 200 small cakes per minute. Has been completely rebuilt in our own shop. A real buy at an attractively low price.

ADDITIONAL REBUILT SOAP MACHINERY

H-A 1500, 3000, 4000, 5000 lbs. capacity. Steam Jacketed Crutchers.

Dopp Steam Jacketed Crutchers, 1000, 1200, 1500 lbs. and 800 gals. capacity.

Ralston Automatic Soap Presses.

Scouring Soap Presses.

Empire State, Dopp & Crosby Foot Presses.

4 roll Granite Toilet Soap Mills.

H-A 4 and 5 roll Steel Mills.

H-A Automatic and Hand-Power slabbers.

Proctor & Schwartz Bar Soap Dryers.

Blanchard No. 10-A and No. 14 Soap Powder Mills.

J. H. Day Jaw Soap Crusher.

H-A 6, 8 and 10 inch Single Screw Plodders.

Allbright-Nell 10 inch Plodders.

Filling and Weighing Machines for Flakes, Powders, etc.

Wood and Steel Soap frames, all sizes.

Soap Remelters.

Automatic Soap Wrapping Machines.

Glycerin Evaporators, Pumps.

Sperry Cast Iron Square Filter Presses, 10, 12, 18, 24, 30 and 36 inch.

Perrin 18 inch Filter Press with Jacketed Plates.

Gedge-Gray Mixers, 25 to 2000 lbs. capacity, with and without Sifter Tops.

Day Grinding and Sifting Machinery.

Schultz-O'Neill Mills.

Day Pony Mixers.

Gardiner Sifter and Mixer.

Proctor & Schwartz Soap Chip Dryers complete.

Doll Steam Jacketed Soap Crutchers, 1000, 1200 and 1350 lbs. capacity.

Day Powder Mixers.

All types and sizes—Tanks and Kettles.

Ralston and H-A Automatic Cutting Tables.

Soap Dies for Foot and Automatic Presses.

Broughton Soap Powder Mixers.

Williams Crusher and Pulverizer.

National Filling and Weighing Machines.

NEWMAN'S NEW MACHINERY

Besides offering our own brand new steel jacketed soap crutchers —one for any kind of soap and the other for laundry soap, our new equipment line includes frames, cutting tables, liquid filling machinery, glass lined and enameled tanks, etc. Send for a complete list.

All used equipment rebuilt in our own shops and guaranteed in first class condition. Send us a list of your surplus equipment. We buy separate units or complete plants.

NEWMAN TALLOW & SOAP MACHINERY CO.
1051 W. 35th St., Chicago

Our 40 Years' Soap Experience Can Help You Solve Your Problems.

CLASSIFIED ADVERTISING

Classified Advertising—All classified advertisements will be charged for at the rate of ten cents per word, $2.00 minimum, except those of individuals seeking employment where the rate is five cents per word, $1.00 minimum. Address all replies to Classified Advertisements with Box Number, care of *Soap*, 254 West 31st St., New York.

Note: All advertisements must be in publisher's hands by the first of the month for that month's issue.

Positions Wanted

Soapmaker—reliable, 15 years' experience in the making of all soda and potash soaps, specialty soaps, waxes, polishes, etc.; foreign experience; seeks new connection. Address Box No. 542, care *Soap*.

Soapmaker-Perfumer: All kinds laundry, toilet, potash soaps. Perfumery, cosmetics, glycerine recovery—make analyses—install plants. Escribo castellano. Address Box No. 543, care *Soap*.

Sales Manager—Seven years personal sales promotion experience opening new accounts for national concern, metropolitan New York territory, selling soaps, powders, detergents, to hotels, institutions, hospitals, restaurants. Large personal following. Self-starter, Gilt-edge references. Present employed. P. O. Box 34, Woodhaven, N. Y.

Soapmaker — Analyst; can make and analyze laundry, textile, toilet, soap powders, etc.; four years' German experience, seeks assistant's job in kettle room. Salary not the object,—opportunity is. Address Box No. 535, care *Soap*.

Sales Executive—experienced in marketing, agricultural and household insecticides. Conducted extensive research project on development of derris, pyrethrum sprays, dusts and spreaders. Seeks new connection. Address Box No. 539, care *Soap*.

Soapmaker—single, ten years' experience mottled, grained, soft and other soaps; hard worker; salary $30-$40 week. Address Box No. 540, care *Soap*.

Superintendent and Soapmaker—Can make and analyze all kinds of soap and soap material. Address Box No. 548, care *Soap*.

Practical Soap Maker—Twenty years' experience in manufacture of laundry, toilet, textile, chip soaps, soap powders, etc. Recently in charge of boiling operations at large plant. Best references. Address Box No. 551, care *Soap*.

Everything for the

PROFESSIONAL EXTERMINATOR

Rat and Mouse Seed—$20 per 100 lbs.

Rat and Mouse Boards—$2.00 and $1.00 per dozen.

Kill-A-Smell—$1.00 per pint.

All-rubber Bellows—$4.25 and $5.25 per dozen.

Silver Fish Powder—45c. per lb.

Super Fluoride (more powerful and effective).

Malium (for safer fumigation)

EXTERMINATING MATERIALS CO.

710 Amsterdam Ave. New York City

SOAP MACHINERY

Every item shipped from our shops at Newark, N. J., is thoroughly overhauled and rebuilt before shipment.

SPECIALS

1—Soap Chip Dryer, 1200 lb.
2—Dopp 650 gal. Steam Jacketed Kettles.
1—Dopp 1200 lb. Steam Jacketed Crutcher.
1—Hershey 1000 lb. Horizontal Jacketed Crutcher.
1—1000 lb. All Steel Soap Powder Mixer.
2—Holmes & Blanchard 24" and 36" 4 cage Disintegrators, for grinding soap powder—no screens, no plugging.

25—Soap Frames, 60"x45½"x14", with trucks.
6—Plodders, Houchin, Rutschman, 4", 4½" double screw, 6", 8", 10".
14—Filter Presses, 42"x42" to 12"x12".
8—Granite Mills, 3 and 4 roll, 12", 18" and 24".
15—Horizontal Mixers, Jacketed and Plain, 15 gal. to 1000 gal.

MISCELLANEOUS—Kettles, Mixers, Pony Mixers, Powder Fillers, Tube Fillers, Labelers, Soap Presses, Soap Wrappers, Tanks, Boilers, Pumps, etc.

Send for Latest Bulletin.

CONSOLIDATED

PRODUCTS COMPANY, INC.

15-21 Park Row, N. Y. C. BArclay 7—0600

We buy your idle Machinery—Single items or entire plants.

"YOU CAN'T MISS"

By Making
YOUR FLY SPRAY
WITH
AN-FO BRAND No. 20
PYRETHRUM
EXTRACT
"IT KILLS THEM"
AN-FO MFG. CO. OAKLAND, CAL.

We Manufacture
For The Trade ONLY

Liquid Soap Base
Auto Soaps
Potash Oil Soap
Shampoo
U.S.P. Cresol Compound
Coal Tar Disinfectants
Liquid Soap
Pine Oil Soap
U.S.P. Green Soap
Shampoo Base
Pine Oil Disinfectants
Insecticides

Ask for samples of these specialty bulk products

HARLEY SOAP CO.
2852 E. Pacific St. Philadelphia

Olive Oil
Olive Oil Foots

Deliveries spot and future in barrels, tank cars, drums or tank wagons.

ESSENTIAL OILS
Lemon—Bergamot—Orange

LEGHORN TRADING CO.
INC.
155 East 44th St., New York
Phone: VAnderbilt 3—6361-2-3
ITALY—SPAIN—GREECE—TURKEY—AFRICA

COLORS
★ ★ ★
SOAP COLORS
of all shades.
•
Try our
Soap Green No. 4247
Soap Yellow No. 4321
Ask for samples.
INTERSTATE COLOR CO., INC.
9 Beekman Street
NEW YORK CITY

Soapmaker—Twenty years' experience. Can make and analyze all kinds of soaps and products. Salary reasonable and hard worker. Address Box No. 549, care *Soap.*

Insecticides—plant superintendent and chemist who has had twenty years' experience in manufacturing insecticides and ten years' experience with biological and chemical control of leading fly spray manufacturer, seeks new connection. Highest references. Address Box No. 546, care *Soap.*

Soapmaker and Chemist—whose past record and experience qualify him for meeting highest technical requirements, desires steady employment with progressive concern. Address Box No. 552, care *Soap.*

Salesman—Now located on Pacific Coast. Six years' experience selling exterminating service in East with unusually successful record on large contract work. Recent experience sale chemical on Coast. Desires to make new connection in San Francisco or near by. Address Box 531, care *Soap.*

POSITIONS OPEN

Wanted—Research chemist, graduate from recognized university, preferably with Ph.D. Degree, with at least five years' experience in the development of detergents. While some experience with soap would be advantageous, applicant must have experience with other detergents. Address Box No. 553, care *Soap.*

A Prominent Manufacturer of liquid soaps, disinfectants, deodorizing cakes, etc., has an opening for a dependable sales representative. Address Box No. 547, care *Soap.*

Miscellaneous

Floor Brushes—We manufacture a very complete line. Catalogue sent upon request. Flour City Brush Company, Minneapolis, Minn.

Liquid Shave Soap—The original liquid shave soap available for manufacturing and marketing by a company of standing with established sales connections. Product now manufactured and sold in a small way. Finest product of its kind. Will work on a royalty basis. Communicate with owner by addressing Box No. 523, care *Soap.*

For Sale—Jones Pin Zie Press. Garber-Eagle Oil Corp., 345 Hewes St., Brooklyn, N. Y.

A New Source For

TRI-SODIUM PHOSPHATE

The Tidewater division of the American Chemical Paint Company has developed and now manufactures a free-flowing Tri-Sodium Phosphate which is furnished in the standard T.S.P. Containers. A sample of the chemical and a quotation on your requirements will be furnished on request.

TRISILA

A new alkaline detergent for use with all soaps and cleansers is also manufactured by us. Samples and prices will be furnished on request.

CHEMICALS ACP PROCESSES

AMERICAN CHEMICAL PAINT CO.

TIDEWATER DIVISION

New Castle, Delaware

CRYS-TINTS

PERFUME and color Para Blocks and Crystals, Bath Salts and Moth Balls in one operation.

The use of Crys-Tints eliminates doubtful results for they provide uniform distribution of Odor and Color and are extremely lasting and stable.

Orange Blossom	**Narcisse**	**Violet**
New Mown Hay	**Wisteria**	**Lilac**
Carnation	**Oriental**	**Rose**
Lavender	**Jasmin**	**Pine**

8 OUNCES TO 100 LBS., RECOMMENDED

$1.50 per Lb.
Double Strength, $2.90 per Lb.
Series D—Uncolored, $ .50 per Lb.
Series E—Uncolored, $1.00 per Lb.

Compagnie Parento, Inc.

CROTON-ON-HUDSON, N.Y.
NEW YORK CITY TORONTO

F. & S.

Quality Colors *for* TOILET SOAPS LIQUID SOAPS

TOILET PREPARATIONS

Long experience enables us to produce colors for all types of soaps.

If you have a shade you want matched send us a sample. We have complete facilities for matching.

Liquid soap colors a specialty—send for samples of F. & S. greens and ambers.

FEZANDIE & SPERRLE, Inc.
205 FULTON STREET
NEW YORK, N. Y.
Import—Manufacture—Export

We manufacture a complete line of high quality waxes for the jobbing trade, including no-rubbing liquid wax, regular type liquid wax, powdered wax, paste wax and also furniture polish. These products can be supplied in bulk, packaged under the Windsor label or with your own label which we supply.

WINDSOR WAX COMPANY
50 Church St. New York N.Y.
factory
611 Newark St. Hoboken, N.J.
Manufacturers of
WAX PRODUCTS EXCLUSIVELY

NRA

We announce development of new type soap colors

PYLAKLORS

They have good fastness to alkali, light, tin, ageing.

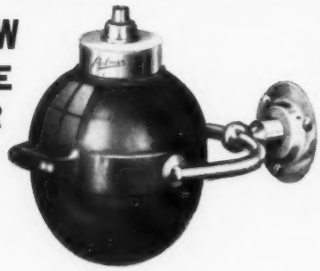
The following shades are already available:

Bright Green	Dark Brown
Olive Green	Palm Green
Yellow	Golden Brown
True Blue	Violet

It will pay you to send for testing samples.

PYLAM PRODUCTS CO., INC.
Manufacturing Chemists, Importers, Exporters
799 Greenwich St. New York City
Cable Address: "Pylamco"

Palmer's New TILTING-TYPE DISPENSER



Unique in design and construction. Standard bowl of beautiful black glass, with gleaming chrome-plated brass parts. Perfectly balanced—automatically returns to original position. Delivers soap in predetermined quantity—will not permit continuous flow of soap.

Projection on glass bowl provides easy, fingertip tilting—convenient one-hand operation. Unlike other similar types, the Palmer TILTING-TYPE Dispenser remains attractively clean and sanitary—no metal bands or crevices to soil or hold secretions of soap.

Bowls in choice of black or clear glass. Standard black is recommended as soap discoloration will not show. Also obtainable with chrome-plated metal bowl—all metal parts chrome-plated.

Palmer PRODUCTS INC
WAUKESHA, WIS.

Write for new illustrated catalog describing complete Palmer line of soap dispensing equipment, janitor and sanitary supplies, maintenance materials and equipment.

Hand Cleaner—New type of powdered hand cleaner containing no grit or abrasive and meeting unusual success on Canadian market, now available to American distributor for sale in the United States. If interested, communicate with Box No. 524, care *Soap*.

Wanted—Janitory Supply Dealers for high grade mophead costing 15c a pound. Southern Chemical Co., Greensboro, N. C.

Salesmen—many years' experience, soap, insecticide and disinfectant line, wants to invest for partnership with small manufacturer or practical chemist. Has large Greater New York trade. Address Box No. 515, care *Soap*.

Dr. George F. Richmond, head of the chemical department of Colgate-Palmolive-Peet Co., died March 21 in the Presbyterian Hospital, Newark, N. J., of pneumonia. He had been with the company for about fifteen years, and prior to that time had been associated with Antoine Chiris Co. and Givaudan-Delawanna.

—♦—

McKesson & Robbins report net earnings of $1,720,259 for 1934, comparing with net profits of $304,248 in the previous year. The volume of business in 1934 totaled $124,452,631, an increase of almost $20,000,000 from the 1933 total.

—♦—

Royal Crown Soaps, Limited, will start work soon on a $15,000 addition to their plant in Winnipeg, Manitoba.

KOPPERS
WHITE TAR
MOTH PROOFING PRODUCTS

Deodorizing
AND MOTHPROOFING
Blocks
PLAIN AND PERFUMED
MADE WITH NAPHTHALENE OR PARA BASE

NAPHTHALENE FLAKES, CHIPS, etc.
DISINFECTANTS EMULSION AND SOLUBLE TYPES
FLY SPRAYS HOUSEHOLD SPRAYS CATTLE SPRAYS

MEMBER
NATIONAL ASSN. INSECTICIDE AND DISINFECTANT MFRS. INC. 1914 INC.

THE WHITE TAR COMPANY
OF NEW JERSEY, INC.
PHONE KEARNY 2-3600
BELLEVILLE PIKE KEARNY, N. J.

NEW AND REBUILT
SOAP MACHINERY

SPECIAL
Attractively priced for quick removal from plant:
1—Proctor two fan Soap Chip Dryer and set of Chilling Rolls.

1—5 Roll Steel Mill
1—10" Houchin-Aiken Plodder
1—Automatic Power Cutting Table
1—Broughton Mixer, jacketed
2—10A Blanchard Mills
3—Soap Presses, Foot and Power
6—Filter Presses, sizes 6" to 36"
6—Granite Stone Mills, 2, 3, and 4 rolls
1—Jones Automatic Soap Press
4—Jacketed Vertical Crutchers
2—1,500 lb. Horizontal Crutchers
2—Hand Power Slabbers
2—Hand Power Cutting Tables
3—Houchin Chippers, Belt Driven
600 and 1,200 lb. Frames, Kettles, Pumps, Tanks, Filter Presses, Wrapping Machines, Tube Fillers, Closers, Crimpers, Dry Powder Mixers, Pulverizers, Grinders, Amalgamators, Mixers, etc.

Send for Complete List (Bulletin No. 15)
WE BUY AND SELL FROM SINGLE ITEMS TO COMPLETE PLANTS.

STEIN-BRILL CORPORATION
183 VARICK STREET NEW YORK, N. Y.
Phone: WAlker 5-6892-3-4
Cable Address: "BRISTEN"

SOAP DIES and STAMPS
—for—
TOILET SOAPS
LAUNDRY SOAPS
BATH TABLETS
STAMPING
For Foot and Power Presses
Manufacture Backed by 35 Years' Experience
ANTHONY J. FRIES
717 Sycamore Street Cincinnati, O., U. S. A.

Where to buy

RAW MATERIALS AND EQUIPMENT

for the Manufacture of Soaps and Sanitary Products

NOTE: This is a classified list of the companies which advertise regularly in SOAP. It will aid you in locating advertisements of raw materials, bulk and private brand products, equipment, packaging materials, etc., in which you are particularly interested. Refer to the Index to Advertisements, on page 126, for page numbers. *"Say you saw it in SOAP."*

ALKALIES

Columbia Alkali Co.
T. G. Cooper & Co.
Dow Chemical Co.
Eastern Industries
Hooker Electrochemical Co.
Innis, Speiden & Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.
Warner Chemical Co.
Welch, Holme & Clark Co.

AROMATIC CHEMICALS

American-British Chemical Supplies
Compagnie Parento
Dodge & Olcott Co.
Dow Chemical Co.
P. R. Dreyer, Inc.
E. I. du Pont de Nemours & Co.
Felton Chemical Co.
Fritzsche Brothers, Inc.
Givaudan-Delawanna, Inc.
Magnus, Mabee & Reynard, Inc.
Merck & Co.
Monsanto Chemical Co.
Naugatuck Chemical Co.
Schimmel & Co.
Solvay Sales Corp.
A. M. Todd Co.
Ungerer & Co.
Van Ameringen-Haebler, Inc.

BULK AND PRIVATE BRAND PRODUCTS

An-Fo Manufacturing Co.
Baird & McGuire, Inc.
Clifton Chemical Co.
Davies-Young Soap Co.
Eagle Soap Corp.
Federal Varnish Co.
Fuld Bros.
Hammond Paint & Chemical Co.
Harley Soap Co.
Hysan Products Co.
Hull Co.
Koppers Products Co.
Kranich Soap Co.
Palmer Products
Philadelphia Quartz Co.
John Powell & Co.
Geo. A. Schmidt & Co.
White Tar Co.
Windsor Wax Co.

CHEMICALS

American-British Chemical Supplies
Bowker Chemical Co.
Columbia Alkali Co.
T. G. Cooper & Co.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Eastern Industries
General Chemical Co.
Grasselli Chemical Co.
Hooker Electrochemical Co.
Industrial Chemical Sales Co.
Innis, Speiden & Co.
Mechling Bros. Chemical Co.
Merck & Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Philadelphia Quartz Co.
Solvay Sales Corp.
Standard Silicate Co.
Swann Chemical Co.
Jos. Turner & Co.
Victor Chemical Works
Warner Chemical Co.
Welch, Holme & Clark Co.

COAL TAR RAW MATERIALS

(Cresylic Acid, Tar Acid Oil, etc.)

American-British Chemical Supplies
Baird & McGuire, Inc.
Barrett Co.
T. G. Cooper & Co.
Innis, Speiden & Co.
Koppers Products Co.
Monsanto Chemical Co.
Reilly Tar & Chemical Co.
White Tar Co.

CONTAINERS and CLOSURES

American Can Co. (Tin Cans, Steel Pails)
Anchor Cap & Closure Corp. (Closures & Bottles)
Cin-Made Corp. (Paper Cans)
Continental Can Co. (Tin Cans)
Maryland Glass Corp. (Bottles)
Metal Package Corp. (Tin Cans)
Owens-Illinois Glass Co. (Bottles)
Wm. Vogel & Bro. (Tin Cans)
Wilson & Bennett Mfg. Co. (Steel Pails and Drums)

DEODORIZING BLOCK HOLDERS

Cin-Made Corp. (Paper)
Clifton Chemical Co.
Eagle Soap Corp.
Fuld Bros.
Hysan Products Co.
Palmer Products, Inc.

ESSENTIAL OILS

Compagnie Parento
Dodge & Olcott Co.
P. R. Dreyer Inc.
Fritzsche Brothers, Inc.
Leghorn Trading Co.
Magnus, Mabee & Reynard, Inc.
Schimmel & Co.
A. M. Todd Co.
Ungerer & Co.
Van Ameringen-Haebler, Inc.

(*Continued from page* 124)

PROFESSIONAL DIRECTORY

PEASE LABORATORIES, Inc.
Chemists, Bacteriologists, Sanitarians
39 West 38th Street
New York
Food, Drug and Cosmetic Problems—Compliance with Official Requirements—Meeting New and Anticipated Competitions with Improved and New Products

H. A. SEIL, Ph.D E. B. PUTT, Ph.C., B.Sc.
SEIL, PUTT & RUSBY, INC.
Analytical and Consulting Chemists
Specialists in the Analysis of Pyrethrum Flowers, Derris Root, Barbasco, or Cube Root—Their Concentrates and Finished Preparations
ESSENTIAL OILS SOAP
16 East 34th Street, New York, N. Y.

STILLWELL AND GLADDING, Inc.
Analytical and Consulting Chemists
Members Association of
Consulting Chemists and Chemical Engineers
130 Cedar Street New York City

LLOYD A. HALL
Analytical and Consulting Chemist
Specializing in the analysis, development, investigation, and improvement of
Soaps, Disinfectants, Cosmetics, Drugs, Polishes and Sanitary Specialties.
RESEARCH—CONSULTATION
1415 W. 37th STREET CHICAGO, ILL.

KILLING
strength of Insecticides
by PEET GRADY METHOD
(Official I. & D. code method) and
PYRETHRINS in PYRETHRUM FLOWERS
(by Gnadinger's Method)
We raised and killed more than 1 million flies in the last 2 years
ILLINOIS CHEMICAL LABORATORIES, INC.
75 E. WACKER DRIVE CHICAGO, ILL.

COST SYSTEMS
Designed and installed for Soap Manufacturers and allied industries. Service in—Cost Analysis—Federal Taxation—Audits and Financial Statements.
TWENTY-FIVE YEARS' EXPERIENCE
LOUIS J. MUEHLE & COMPANY
CERTIFIED PUBLIC ACCOUNTANTS
DES MOINES IOWA

Skinner & Sherman, Inc.
246 Stuart Street, Boston, Mass.
Bacteriologists and Chemists
Disinfectants tested for germicidal value or phenol coefficient by any of the recognized methods.
Research—Analyses—Tests

CONSULTANTS
offering their services to manufacturers of soaps and sanitary specialties should apprise the industry of their facilities through this professional card department. SOAP reaches 2,200 manufacturers who need help of a professional nature.

Entomological Testing Laboratories, Inc.
We offer you a medium for purchasing insecticides on an intelligent basis.
Entomological testing by the Peet-Grady method, and chemical examination of insecticides are available.
114 E. 32nd St. New York, N. Y.

Protect Your Products by
Patents—Trade Marks
All inventions submitted held confidential and given personal attention by members of the firm.
Form "Evidence of Conception" and instructions "How to Establish Your Rights"—Free
LANCASTER, ALLWINE & ROMMEL
Patent Law Offices
420 Bowen Building Washington, D. C.

A manufacturer was producing water wax. It did not meet the requirements of a specification on which he wished to bid. The problem was submitted to us and his product altered sufficiently to meet the specification. The cost of such service is very moderate.
Foster D. Snell, Inc.
Chemists-:-Engineers
305 Washington St.,
Brooklyn, N. Y.

RAW MATERIAL AND EQUIPMENT GUIDE

(*Continued from page* 122)

NOTE: This is a classified list of the companies which advertise regularly in SOAP. It will aid you in locating advertisements of raw materials, bulk and private brand products, equipment, packaging materials, etc., in which you are particularly interested. Refer to the Index to Advertisements, on page 126, for page numbers. *"Say you saw it in SOAP."*

MACHINERY

Blanchard Machine Co. (Soap Powder)
Ertel Engineering Corp. (Filters, Mixers, Bottle Fillers)
Anthony J. Fries (Soap Dies)
Houchin Machinery Co. (Soap Machinery)
Huber Machine Co. (Soap Machinery)
International Nickel Co. (Monel Metal)
R. A. Jones & Co. (Automatic Soap Presses and Cartoning Machinery)
Package Machinery Co. (Packaging)
Proctor & Schwartz (Dryers)
C. G. Sargent's Sons Corp. (Dryers)
Stokes & Smith Co. (Packing Machinery)
U. S. Bottlers Machinery Co. (Bottle Filling and Cleaning)

MACHINERY, USED

Consolidated Products Co.
Newman Tallow & Soap Machinery Co.
Stein-Brill Co.

MISCELLANEOUS

Anchor Cap & Closure Corp. (Metal Caps)
T. G. Cooper & Co. (Waxes)
Dobbins Mfg. Co. (Pails, Mop Wringers, etc.)
Exterminating Materials Co.
General Naval Stores Co. (Pine Oil-Rosin)
Hercules Powder Co. (Pine Oil and Rosin)
Industrial Chemical Sales Co. (Decol. carbon, Chalk)
Innis, Speiden & Co. (Fumigants and Waxes)
Pylam Products Co. (Lathering Agent)
Rohm & Haas Co. (Insecticide Base)
Sanitor Mfg. Co. (Paper Seat Covers)

OILS AND FATS

T. G. Cooper & Co.
Eastern Industries
Industrial Chemical Sales Co.
Leghorn Trading Co.
Murray Oil Products Co.
Newman Tallow & Soap Machinery Co.
Theobald Animal By-Products Refinery
United Africa Co.
Welch, Holme & Clark Co.

PARADICHLORBENZENE

Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Hooker Electrochemical Co.
Merck & Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.

PERFUMING COMPOUNDS

Compagnie Parento
Dodge & Olcott Co.
P. R. Dreyer, Inc.
Felton Chemical Corp.
Fritzsche Brothers, Inc.
Givaudan-Delawanna, Inc.
Magnus, Mabee & Reynard, Inc.
Schimmel & Co.
Ungerer & Co.
Van Ameringen-Haebler, Inc.

PETROLEUM PRODUCTS

Atlantic Refining Co.
O'Connor & Kremp
Sherwood Petroleum Co.
L. Sonneborn Sons.

PYRETHRUM AND DERRIS PRODUCTS

Insect Flowers and Powder, Pyrenthrum Extract, Derris Products

An-Fo Mfg. Co. (Extract)
W. Benkert & Co.
Derris, Inc.
Hammond Paint & Chemical Co.
McCormick & Co.
McLaughlin, Gormley, King Co.
S. B. Penick & Co.
John Powell & Co.
Sherwood Petroleum Co.

SOAP COLORS

Fezandie & Sperrle
Interstate Color Co.
Pylam Products Co.

SOAP DISPENSERS

Clifton Chemical Co.
Eagle Soap Corp.
Fuld Bros.
Palmer Products

SODIUM SILICATE

General Chemical Co.
Grasselli Chemical Co.
Mechling Bros. Chemical Co.
Philadelphia Quartz Co.
Standard Silicate Co.

SPRAYERS

Breuer Electric Mfg. Co.
Dobbins Mfg. Co.
Hudson Mfg. Co.
Lowell Sprayer Co.
Wm. Vogel & Bro.

TRI SODIUM PHOSPHATE

American Chemical Paint Co.
Bowker Chemical Co.
General Chemical Co.
Grasselli Chemical Co.
Swann Chemical Co.
Victor Chemical Works
Warner Chemical Co.

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and
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Vol. 6, Sept., 1930 to Dec., 1930—2 sets @ 5.00 ea.
Vol. 7, Jan., 1931 to Dec., 1931—1 set @ 12.00 ea.
Vol. 9, Jan., 1933 to Dec., 1933—1 set @ 12.00 ea.
Vol. 10, Jan., 1934 to Dec., 1934—2 sets @ 12.00 ea.

We also have a few bound volumes of Oil & Fat Industries, published as a separate publication prior to Jan., 1932 when it was added to SOAP as the Production Section. These are for the years 1929 and 1931 only and cost $5.00 per volume.

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136 LIBERTY STREET NEW YORK

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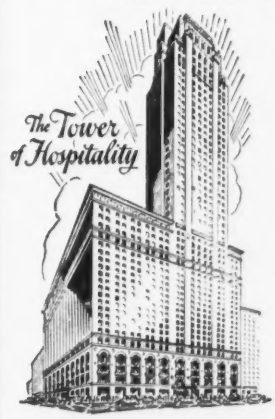
Sleep in Mountain Air
AT THE 46-STORY
MORRISON HOTEL Madison and Clark Streets
THE CENTER OF DOWNTOWN



In the unbroken silence of a Morrison Tower room, you sleep soundly all night; yet you are only an elevator ride from the heart of the business district.

SINGLE ROOM $2.50 UP
$4.00 Double
with Bath, Servidor and Circulating Ice-Water

Home of
TERRACE GARDEN
and
BOSTON OYSTER HOUSE

LEONARD HICKS, *Managing Director*

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MECHLING'S

EST. 1869

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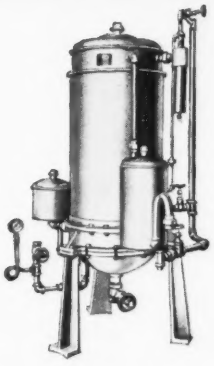

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Canadian Distributor:
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for low cost *in* para block *manufacture*

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President

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